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NYILATKOZAT

Alulírott, **LAYAN AL FATAYRI**, büntetőjogi felelősségem tudatában kijelentem, hogy a Debreceni Egyetem Marton Géza Állam - és Jogtudományi Doktori Iskolában a doktori fokozat megszerzése céljából benyújtott, *From Tradition to Innovation: The Evolution and Future of AI in International Arbitration* című értekezésem saját önálló munkám, a benne található, másoktól származó gondolatok és adatok eredeti lelőhelyét a hivatkozásokban (lábjegyzetekben), az irodalomjegyzékben, illetve a felhasznált források között hiánytalanul feltüntettem.

Kijelentem, hogy a benyújtott értekezéssel azonos tartalmú értekezést más egyetemen nem nyújtottam be tudományos fokozat megszerzése céljából.

Tudomásul veszem, hogy amennyiben részben vagy egészben sajátomként mutatom be más szellemi alkotását, vagy az értekezésben hamis, esetleg hamisított adatokat használok, és ezzel a doktori ügyben eljáró testületet vagy személyt megtévesztem vagy tévedésben tartom, a megítélt doktori fokozat visszavonható, a jogerős visszavonó határozatot az egyetem nyilvánosságra hozza.

Debrecen, April 2026

Aláírás

Layan Al Fatayri

Recommendation

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Title: From Tradition to Innovation: The Evolution and Future of AI in International Arbitration

Ms. Layan Al Fatayri has started her doctoral studies 4 years ago. During her studies she has shown high motivation on her chosen topic, fulfilled all her duties on a very high niveau. As her supervisor I was aware of every stage and step of progress of her dissertation and research.

The focus of the dissertation is at the crossroad of a technical development and the potentialy progress of the alternative dispute resolution method, the arbitration. The author's work isn't just another dissertation on AI, it can be a very sharp starting point for all those who are involved into the commercial, intra state arbitration and feel the pressure of the technical progression. By her practical way of research and thinking she offers the current state of the scientific knowledge in relation to AI and arbitration, and gives suitable recommendations and answers significant questions.

To reach the final conclusions, she has researched the historical background and development of international arbitration in inter-state, international investment, and international commercial arbitration to better understand and highlight the legal and technological developments in the field.

The three types of arbitrations are now facing similar transformations driven by technology, particularly by the growing influence of Artificial Intelligence (AI). Bringing these three areas together allows for a broader, more integrated perspective on how AI is reshaping dispute resolution across different levels of international arbitration. This study focuses on the commercial dimensions of international arbitration, namely inter-state, international investment, and international commercial arbitration. International consumer arbitration, although is also increasingly influenced by AI, was not included, as it raises distinct considerations related to consumer protection and individual access to justice rather than commercial or institutional dispute resolution.

The significance of this study lies in its comparative and forward-looking nature. This thesis takes a different approach by examining how AI interacts with the legal, ethical, and procedural dimensions of all three forms of arbitration. It aims to highlight both the opportunities and the challenges that come with integrating AI into these systems. The research also reflects some of the new trends shaping the field today, such as digitalization, the rise of online dispute resolution, and the increasing use of algorithmic and predictive tools in arbitral proceedings.

The author has applied a wide scale of research methods, such as theoretical and historical analysis, but this study also incorporates survey research and semi-structured interviews with practicing arbitrators. These empirical methods were designed to capture the real-world perspectives of those who directly engage with arbitration and who may soon face, or are already facing, the integration of AI into their work. This mix of doctrinal, historical, and empirical approaches gives the research

a balanced foundation, one that connects abstract legal principles with the evolving realities of arbitral practice and procedures.

The purpose of this thesis is to carefully examine the complex development of inter-state arbitration, international investment arbitration, and international commercial arbitration - the three main components of international arbitration. The aim is to provide a comprehensive overview of the evolving structures that gave rise to various arbitrations, exploring the turning points from their conception to the established systems they represent today. Furthermore, by analyzing the cross-cutting effects of traditional conflict resolution methods and modern technological breakthroughs, especially artificial intelligence, this study provides a new perspective. The research examines how technology, especially AI, has affected case management systems, court proceedings, overall settlement efficiency, and other aspects of arbitration, particularly in international arbitration across inter-state, international investment, and international commercial contexts.

On the grounds of the workplace's defense outcomes, the author has worked properly on the dissertation's latest version, taking into account all suggestions, which have significantly raised the level of the research

I honestly think, that **Layan Al Fatayri** has worked properly on her dissertation, she showed a researcher's attitude of very high niveau. The dissertation meets all the necessary requirement, so I suggest the Doctorate Council to initiate the public defense procedure.

Debrecen, 17. 04. 2026.

Yours sincerely,



Zsolt Hajnal

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This thesis marks the end of an important and rewarding academic journey, and I would like to express my sincere gratitude to everyone who supported me throughout its completion.

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To everyone who contributed, directly or indirectly, to the completion of this thesis, I extend my sincere thanks.

List of Abbreviations

Alternative Dispute Resolution (ADR)

American Arbitration Association (AAA)

Arbitrator Intelligence Questionnaire (AIQ)

Arbitrator Research Tool (ART)

Artificial Intelligence (AI)

Bilateral Investment Treaties (BIT)

Chartered Institute of Arbitrators Guideline on the Use of AI in Arbitration (Ciarb AI Guideline)

Court of Justice of the European Union (CJEU)

Court of Justice of the European Union (CJEU)

Economic Community of West African States (ECOWAS)

EU Artificial Intelligence Act (AI Act)

International Center for Settlement of Investment Disputes (ICSID)

International Chamber of Commerce (ICC)

International Chamber of Commerce (ICC), Stockholm Chamber of Commerce (SCC)

International Court of Justice (ICJ)

JusMundi (JusAI)

Lebanese Code of Civil Procedure (LCCP)

La Loi de Programmation de la justice (LPJ)

London Corn Trade Association (LCTA)

London Court of International Arbitration (LCIA)

London Court of International Arbitration (LCIA)

Natural Language Processing (NLP)

North American Free Trade Agreement (NAFTA)

Online Dispute Resolution (ODR)

Optical Character Recognition (OCR)

Overseas Private Investment Corporation (OPIC)

Permanent Court of Arbitration (PCA)

Permanent Court of International Justice (PCIJ)

Qatar International Centre for Conciliation and Arbitration (QICCA)

Qatar International Court and Dispute Resolution Centre (QICDRC)

Silicon Valley Arbitration & Mediation Center (SVAMC)

Singapore International Arbitration Center (SIAC)

Treaty on the Functioning of the European Union (TFEU)

United Arab Emirates (UAE)

United Kingdom (UK)

United Nations (UN)

United Nations Commission on International Trade (UNCITRAL)

United Nations Commission on International Trade Law (UNCITRAL)

United Nations Conference on Trade and Development (UNCTAD)

United Nations Convention on the Law of the Sea (UNCLOS)

United States of America (US)

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INTRODUCTION

I. Rationale and Significance of the Study

International Arbitration, as an alternative to litigation, has undergone significant development and progress over the years. Historical evidence also indicates that arbitration has been the most preferred method for resolving disputes in early societies. Therefore, it is essential to have a clear understanding of the historical background of arbitration, including inter-state, international investment, and international commercial arbitration, to be able to dive into their technological aspects. Therefore, the main aim of this section is to provide the reader with a quick overview of the history of international arbitration, which will be further developed in the coming chapters. By presenting this context, we can better comprehend the development of international arbitration over time and its role in facilitating advancements in the field.

International Arbitration originated in civilizations, where disputes were frequently settled through the intervention of neutral third parties. International Arbitration was often utilized to settle commercial and contractual disputes in ancient Greece, for example.¹ An early type of arbitration was the appointment of arbitrators, who were respected persons chosen for their impartiality. It has been stated by Hugo Grotius (1583 -1645) known by De Arbitris Book that “there have always been two kinds of arbitrators – one elected to determine the question in the capacity of a Judge when he must act per all the rules of law and judicial procedures which govern the discharge if the duties of the Judge; the other kind of arbitrator will hear the case and pronounce his award not in compliance with technical rules of law or procedure, but according to equity and reason.”²

Moreover, during the Middle Ages, business and trade groups emerged across Europe. These organizations were crucial to commerce and industry, and they regularly employed arbitration to resolve disputes among their members. The "Law of Merchants," or “Lex Mercatoria”, was a loose set of rules and practices for business that promoted global trade and mostly depended on arbitration for dispute resolution. Arbitration developed significantly during this period. Nonetheless, there has been a rise in arbitration conventions over the 20th century. The New York Convention (1958) on the Recognition and Enforcement of Foreign Arbitral Awards³ It is one of the most well-known conventions. This convention established the framework for cross-border enforcement of arbitral awards, promoting international arbitration on a worldwide scale. Furthermore, the creation of organizations or arbitration institutions such as the International

¹ Centner, Daniel, and Ford, Megan, “A BRIEF PRIMER ON THE HISTORY OF ARBITRATION” American Bar Association, Chapter 1, 2 <https://www.americanbar.org/content/dam/aba-cms-dotorg/products/inv/book/399836364/chap1-5190560.pdf>.

² Macassey, Lynden. “INTERNATIONAL COMMERCIAL ARBITRATION,—ITS ORIGIN, DEVELOPMENT AND IMPORTANCE.” American Bar Association Journal 24, no. 7 (1938): 518–82. <http://www.jstor.org/stable/25713701>.

³ “U.N. Convention on the Recognition and Enforcement of Foreign Arbitral Awards.” 1968. International Legal Materials 7 (5): 1042–61. <https://doi.org/10.1017/s0020782900051597>.

Chamber of Commerce (ICC) and the International Centre for Settlement of Investment Disputes (ICSID) extended the institutional framework for international arbitration.

Over the years, the historical growth of arbitration has laid the foundation for various modern trends and advancements in this sector to adapt to the demands of arbitrators and parties. For example, advancements related to the arbitration processes have been altered by the digital era, which will be tackled in this dissertation.

We can deduce that the path of international arbitration through history displays a rich tapestry of evolution and innovation. Arbitration has continually evolved to the changing requirements of society and industry, from its basic roots in ancient cultures to its contemporary international form.

Although the historical background and development of international arbitration in inter-state, international investment, and international commercial arbitration will be further developed in the coming chapters of the dissertation to better understand and highlight the legal and technological developments in the field, this section provides a quick overview of the historical background of arbitration.

Moreover, building on this historical background, the rationale behind this study stems from the recognition that, although inter-state, international investment, and international commercial arbitration differ in their legal foundations and institutional structures, they are now facing similar transformations driven by technology, particularly by the growing influence of Artificial Intelligence (AI). Bringing these three areas together allows for a broader and more integrated perspective on how AI is reshaping the way disputes are resolved across different levels of international arbitration. This study focuses on the commercial dimensions of international arbitration, namely inter-state, international investment, and international commercial arbitration. International consumer arbitration, although it is also increasingly influenced by AI, was not included, as it raises distinct considerations related to consumer protection and individual access to justice rather than commercial or institutional dispute resolution. Despite their distinctions, all three share the same ultimate goal: to deliver fair, efficient, and legitimate outcomes through neutral and independent decision-making. AI challenges and enhances these shared goals, making it an ideal common ground for comparative exploration.

The significance of this study lies in its comparative and forward-looking nature. Most existing research tends to focus on AI in one form of arbitration, often commercial arbitration, without linking it to the wider international landscape. This thesis takes a different approach by examining how AI interacts with the legal, ethical, and procedural dimensions of all three forms of international arbitration. It aims to highlight both the opportunities and the challenges that come with integrating AI into these systems. On one hand, AI has the potential to improve efficiency, consistency, and access to justice; on the other, it raises serious questions about transparency, accountability, and the preservation of human judgment in decision-making. The research also reflects some of the new trends shaping the field today, such as digitalization, the rise of online dispute resolution, and the increasing use of algorithmic and predictive tools in arbitral proceedings. These developments are not only changing how the processes are managed but also

influencing how evidence is evaluated and how decisions are formed. As arbitration moves further into the digital age, it faces the ongoing challenge of embracing innovation while remaining faithful to its fundamental values of impartiality, confidentiality, and due process.

To complement its theoretical and historical analysis, this study also incorporates original survey research and semi-structured interviews with practicing arbitrators. These empirical methods were designed to capture the real-world perspectives of arbitrators who directly engage with arbitration and may soon face or already are facing the integration of AI in their work. The aim was to move beyond theory and understand how arbitrators themselves perceive the benefits, limitations, and ethical implications of using AI tools. Their insights add depth and authenticity to the study, allowing it to combine academic analysis with practical experience. This mix of doctrinal, historical, and empirical approaches gives the research a balanced foundation, one that connects abstract legal principles with the evolving realities of arbitral practice and procedures.

II. Scope of Research & Hypothesis

The purpose of this thesis is to carefully examine the complex development of inter-state arbitration, international investment arbitration, and international commercial arbitration - the three main components of international arbitration. This study begins by examining the origins and development of these conflict resolution mechanisms from historical and legal perspectives to fully understand the conditions that led to their creation and the adaptations that shaped them into their current state. The aim is to provide a comprehensive overview of the evolving structures that gave rise to various arbitrations, exploring the turning points from their conception to the established systems they represent today. Furthermore, by analyzing the cross-cutting effects of traditional conflict resolution methods and modern technological breakthroughs, especially artificial intelligence, this study provides a new perspective. The research examines how technology, especially AI, has affected case management systems, court proceedings, overall settlement efficiency, and other aspects of arbitration, mainly in international arbitration in inter-state, international investment, and international commercial arbitration.

As the digital age continues to transform the arbitration landscape, the study assesses the impact of the adoption of AI tools and technology in three key areas of international arbitration: inter-state, international investment, and international commercial arbitration.

Through careful analysis of recent cases and emerging technological trends, the dissertation seeks to provide significant insights into the relationship between technology, specifically AI, and the evolving international arbitration field. To provide experts in the field of international dispute resolution with a comprehensive understanding of the current field and arbitration aspects, the dissertation critically assesses the development of the above-mentioned fields of arbitration, along with the introduction of new technological tools, including AI. This dissertation seeks to be a comprehensive resource, providing a forward-looking study of the transformational features influencing the future of the above-mentioned arbitration fields, blended with an in-depth analysis of the historical backgrounds.

In other words, the objectives and scope of research will be as follows: first, we will examine the evolution of inter-state arbitration, international investment arbitration, and international commercial arbitration from historical and legal perspectives across time. During this examination of evolution, we will analyze the important legal systems and significant cases that shaped the development of arbitration procedures of inter-state arbitration, international investment arbitration, and international commercial arbitration. Moreover, in this study, we will examine the situation of international arbitration today in light of the latest developments in technology and the incorporation of artificial intelligence, while taking into consideration the ways that artificial intelligence and technology have affected international arbitration's case administration, procedural elements, decision-making procedures, and the international arbitration field in general.

Lastly, in this study, we will also examine the potential and difficulties posed by the relationship between established arbitration procedures and cutting-edge technology, along with providing recommendations on how to improve and modify international arbitration procedures in light of emerging technologies and artificial intelligence through a comparative analysis.

To sum up, this scope of work that the study tackles sheds light on the benefits and problems presented by technical improvements in the modern age while also adding to our grasp of the historical foundations of arbitration systems, focusing on inter-state arbitration, international investment arbitration, and international commercial arbitration. This dissertation's findings and recommendations can influence how international arbitration is advancing in the presence of rapid technological and artificial intelligence advancements.

This thesis will tackle the following hypothesis questions throughout its chapters:

- The historical evolution of international arbitration, namely inter-state, international investment, and international commercial arbitration, from treaty-based codification to AI-assisted processes, illustrates a continuing tension between legal standardization and technological innovation in the governance of cross-border disputes.
- The integration of artificial intelligence tools in international arbitration improves efficiency in case management and procedural tasks, but simultaneously introduces challenges related to transparency, fairness, and legitimacy.
- Artificial intelligence will progressively redefine roles within the arbitral process, but its long-term impact will differ across inter-state, international investment, and international commercial arbitration due to variations in legal frameworks and institutional practices.
- Artificial intelligence tools cannot currently replace human arbitrators in international arbitration due to technological, ethical, and legal constraints, but they can function as complementary tools supporting arbitrators.
- The effective and legitimate integration of artificial intelligence in arbitration depends on the development of regulatory safeguards, ethical standards, and institutional reforms recognized by practitioners and policymakers.

Building on the objectives and scope of this dissertation, the following hypotheses guide the analysis across the chapters. First, it is hypothesized that the historical development of inter-state arbitration, international investment arbitration, and international commercial arbitration has been primarily shaped by treaties, conventions, and legal instruments that continue to define their modern practice. Second, it is hypothesized that the integration of artificial intelligence into arbitration enhances efficiency but simultaneously raises several concerns. Third, it is hypothesized that while AI will increasingly redefine roles within the arbitral process, it cannot yet replace human arbitrators due to technological, ethical, and legal limitations. Finally, it is hypothesized that the effective and legitimate incorporation of AI in arbitration ultimately depends on the development of appropriate regulatory safeguards, ethical standards, and institutional reforms. Together, these hypotheses provide a structured framework for assessing the historical evolution, current challenges, and prospects of international arbitration in the digital era in the chapters.

III. Applied Methods

This dissertation employs a mixed-methods research methodology, combining qualitative and quantitative approaches to examine the historical, legal, and technological dimensions of international arbitration, with particular attention to the integration of AI. The rationale for adopting a mixed-methods approach lies in the need to balance doctrinal legal analysis with empirical evidence, ensuring both theoretical depth and practical insight.

Doctrinal and Historical Analysis

The study begins by examining the historical and legal development of inter-state, international investment, and international commercial arbitration. This was achieved through an extensive review of legal documents, treaties, conventions, arbitral rules, scholarly books, and journals. This doctrinal method provided a solid foundation for identifying how arbitration has evolved and how technological advancements, particularly AI, are now influencing the field.

Survey Research

To complement the doctrinal analysis with empirical evidence, an online survey was distributed to arbitrators and legal professionals with experience or familiarity in the field of arbitration. The survey was designed to generate quantitative data on key themes relevant to this research, including the extent of AI adoption in arbitral practice, the perceived impact of AI on the role of arbitrators, and professional attitudes toward the fairness, efficiency, and reliability of AI-assisted processes. In particular, the survey explored the frequency and nature of AI use, perceptions regarding whether AI functions primarily as a supportive tool or as a potential substitute for certain arbitral functions, and respondents' views on the extent to which AI may influence decision-making, procedural efficiency, and the future scope of arbitral work. These questions were deliberately chosen because they directly address the core hypotheses of this dissertation: whether AI enhances efficiency, whether it can or should replace human arbitrators, and whether it poses

risks to fairness and legitimacy. Alternative questions, such as broad inquiries into technology adoption in general or the use of unrelated digital tools, were excluded because they would not provide specific or actionable insights into the impact of AI on arbitration. By focusing tightly on efficiency, fairness, legitimacy, and the future role of arbitrators, the survey ensured that the data collected was both relevant and aligned with the research objectives.

Semi-Structured Interviews

To enrich the survey results with qualitative depth, semi-structured interviews were conducted with experienced arbitrators and practitioners from diverse jurisdictions. The interview questions were selected because they reflect the practical, normative, and future-oriented dimensions of the research. Broader questions, such as general attitudes toward technology or unrelated legal innovations, were intentionally excluded, as they would not contribute meaningfully to the central aim of this dissertation: assessing the opportunities, risks, and future of AI in arbitration. The chosen questions strike a balance between theoretical concerns (fairness, legitimacy, ethics) and practical considerations (efficiency, skills, regulatory frameworks).

Historical and Ethical Approaches

In addition to doctrinal, survey, and interview methods, a historical approach was applied to situate modern developments within the longer trajectory of arbitration. Ethical standards were carefully observed throughout the research. Participants in both the survey and interviews were informed of the study's objectives, assured of confidentiality, and provided consent before participation.

Summary

By combining doctrinal analysis with empirical methods, this dissertation ensures a comprehensive and multi-layered exploration of the subject. The survey provided measurable trends in how AI is perceived and used, while the interviews captured professional perspectives that statistics alone could not reveal. The decision to focus survey and interview questions narrowly on efficiency, fairness, legitimacy, and the future of arbitrators was made to ensure coherence with the research hypotheses and to avoid dilution of findings through overly general inquiries.

IV. Structure

The dissertation follows the structure below:

Chapter One (1) tackles the historical and legal aspects of inter-state arbitration. This chapter examines in depth the legal and historical development of inter-state arbitration. By providing readers with a comprehensive overview of the foundations and key events that have shaped the history of inter-state arbitration, this chapter hopes to provide practitioners and scholars with a solid framework for navigating the unique details of this field.

The chapter then provides a broad analysis of the legal frameworks and treaties that play a crucial role in defining the characteristics of inter-state arbitration. To achieve this, it is necessary to carefully study the main international treaties, conventions, and agreements that have established the guiding concepts, standards, and guidelines. Readers will learn about the changing rules governing inter-state arbitration in this comprehensive study.

Moreover, the way that this chapter and the other two chapters address the historical and legal aspects sets this dissertation apart. Through tackling the historical and legal aspects of inter-state arbitration, this chapter provides readers with a clear understanding of this field of arbitration and gives them a strong ground to dive into the modern technological advances that have substantially affected inter-state arbitration in the coming chapters. In other words, in this chapter, the reader expands an understanding of inter-state arbitration in a world where conflict resolution is consistently evolving.

To sum up, this first chapter of inter-state arbitration is principally a full introductory chapter to this type of arbitration, providing a detailed analysis of its historical and legal aspects.

Chapter Two (2) tackles the historical and legal developments or aspects of international investment arbitration. This chapter aims to provide a clear understanding of the crossroads occurring within these main aspects of international investment arbitration to have a better understanding of this field.

In addition to the historical aspects of international investment arbitration that will provide the readers with a comprehensive overview of the foundations and key events that have shaped its history, this chapter will also provide a comprehensive and careful examination of the legal aspects of international investment arbitration. The laws, treaties, and conventions that have played a significant role in shaping the international investment arbitration field are delicately examined and analyzed. The main aim and purpose of this chapter is to determine the fundamental historical development and legal instruments that have governed the functioning of international investment arbitration by examining the major legislative records.

Moreover, the way that this chapter addresses the historical and legal aspects sets this dissertation apart. Through tackling the historical and legal aspects of international investment arbitration, this chapter provides readers with a clear understanding of this field of arbitration and gives them a strong ground to dive into the modern technological advances that have substantially affected investment arbitration in the coming chapters. In other words, in this chapter, the reader expands an understanding of international investment arbitration in a world where conflict resolution is consistently evolving.

In conclusion, this chapter aims to present a comprehensive analysis and overview of the development of international investment arbitration from historical and legal perspectives.

Chapter Three (3) tackles the historical and legal developments or aspects of international commercial arbitration. Through examining these aspects, this chapter aims to analyze in detail how this type of arbitration has evolved through time and the effects it has on global trade.

This chapter will start by tackling the historical aspect of international commercial arbitration, provide the readers with a comprehensive overview of the foundations and key events that have shaped its history, and help readers to dive into the legal aspect of this field. This chapter will also provide a detailed and careful examination of the legal aspects and environment of international commercial arbitration. In other words, major conventions, cases, treaties, and regulations that had an impact on shaping this field of arbitration are examined. Through examining these significant legal resources, cases, and conventions, readers will gain insight into the dynamic and changing nature of the legal base governing international commercial arbitration.

Moreover, the way that this chapter addresses the historical and legal aspects sets this dissertation apart. Through tackling the historical and legal aspects of international commercial arbitration, this chapter provides readers with a clear understanding of this field of arbitration and gives them a strong ground to dive into the modern technological advances that have substantially affected commercial arbitration in the coming chapters. In other words, in this chapter, the reader expands an understanding of international commercial arbitration in a world where conflict resolution is consistently evolving.

By presenting these three chapters, which address the historical and legal foundations of inter-state arbitration, international investment arbitration, and international commercial arbitration, this thesis provides the reader with the necessary background to understand the intersection of these arbitral frameworks with AI and technological advancement, as well as the more detailed issues examined in the chapters that follow.

Chapter Four (4) tackles the evolving intersection of artificial intelligence and international arbitration, with a particular focus on inter-state, international commercial arbitration, and international investment arbitration. This chapter examines how AI is transforming the landscape of international arbitration and the arbitration process, specifically enhancing efficiency and accessibility in solving complex cross-border disputes. Moreover, the chapter also explores the potential impact of AI tools in arbitration, considering both its advantages, such as streamlining case management and analysis, along with its drawbacks and challenges that have resulted and could result from implementing such tools within the arbitration process. Eventually, the chapter provides a critical assessment of the role of AI in shaping international arbitration in general and inter-state, international investment, and international commercial arbitration in particular, offering an insight into the opportunities and limitations of such integration. Moreover, drawing from insights gathered through interviews conducted with arbitrators from various jurisdictions and backgrounds, this chapter seeks to provide new perspectives on the existing literature on the intersection of AI with international arbitration, its benefits, and drawbacks.

Chapter Five (5) tackles the evolving future of AI in international arbitration, especially in inter-state, international investment, and international commercial arbitration. Building on the insights discussed in *Chapter Four (4)*, which addressed the intersection of AI along with its benefits and drawbacks, this chapter focuses on the future of AI in international arbitration across inter-state, international investment, and international commercial arbitration. As we are moving towards a

digitalized legal landscape, this chapter tackles how AI might and will transform the international arbitration field and redefine roles within the field. By exploring potential developments, innovations, and AI tools used, this chapter will provide a forward-looking analysis of how AI will shape the future of international arbitration in general and inter-state, international investment, and international commercial arbitration in specific. Through the insights gathered through interviews conducted with arbitrators from various jurisdictions and backgrounds, we aim to uncover the evolution of international arbitration within the AI era by offering views on how the future of international arbitration holds.

*Chapter Six (6)*⁴ The rapid advancement of technology and the increasing adoption of AI have prompted significant debate within international arbitration. This chapter examines whether AI arbitrators could replace human decision-makers or whether their role is more appropriately understood as supportive tools within the arbitral process. Although previous scholarship has explored the potential of AI in arbitration, persistent uncertainties remain concerning enforceability, conceptual clarity, and compatibility with existing legal frameworks. The primary objective of this research is to critically assess these challenges while addressing the broader implications of integrating AI into arbitral practice. To achieve this, the study employs a mixed-method approach. It combines a normative legal analysis of current arbitral laws and principles with empirical insights drawn from an original survey conducted by the author. In addition, the study incorporates statistical data from a recent practitioner-based survey to provide a comparative context and enrich the analysis. The findings reveal that while AI offers considerable promise in enhancing efficiency, consistency, and accessibility in arbitration, practitioners express caution regarding its ability to fully replace human arbitrators. Concerns related to procedural fairness, transparency, and enforceability of awards remain central, with respondents emphasizing that AI is better suited to complement human decision-making rather than replace it. This study contributes originality by merging legal theory with practitioner perspectives, thereby bridging the gap between abstract legal debates and practical realities.

Chapter Seven (7) provides a comprehensive analysis of the use of AI in international arbitration, building on the findings and discussions in the previous chapters. It focuses on the areas of international arbitration, assessing the key patterns and trends identified earlier, and incorporating insights from expert interviews into key questions related to the adoption of AI. The analysis examines the practical implications of these insights, including the opportunities and challenges that AI poses in improving processes, supporting decision-making, and ensuring fair outcomes. It also critically examines how the data and insights from the interviews may or may not align with previous studies and current practice, providing a nuanced understanding of the role of AI in arbitration. Based on these findings, the chapter concludes with targeted recommendations aimed at addressing the identified challenges and maximizing the benefits of AI. These recommendations are specifically designed for stakeholders, including practitioners, institutions, and policymakers,

⁴ This chapter has been accepted for publication and is currently in the final stages of review and publication in the International Review of Law (Qatar University).

with a focus on strategies to enhance the effectiveness, fairness, and legitimacy of international arbitration in the AI era. By linking theoretical discussions with practical perspectives, this chapter provides practical guidance for navigating the intersection of AI and international arbitration.

CHAPTER 1

From Diplomacy to Law: The Rise of Inter-State Arbitration

Inter-state arbitration is a legal procedure whereby two or more sovereign nations willingly submit their conflicts to be resolved through arbitration. The states concerned have consented to this mode of dispute settlement and to follow the arbitrators' ruling.⁵ The process of inter-state arbitration as a means of settling conflicts between sovereign nations bears witness to the dynamic growth that has marked its historical and legal sequence. How has inter-state arbitration evolved from both legal and historical perspectives? To answer this question, two exclusive aspects should be taken into consideration to have a full understanding of the nature of inter-state arbitration and to help us understand its intersection with technology and AI in the coming chapters. These aspects include the historical and legal aspects.

By examining these two aspects, readers will gain a thorough understanding of the evolving dynamics of inter-state arbitration, where it has evolved significantly over time as a result of the increasing codification of international legal principles, as well as historical and technological shifts in global power dynamics. This information is the basis for a thorough understanding of the following chapters.

I. Historical Aspect

The history of international arbitration, including inter-state arbitration, dates back to the Ancient and the Middle Ages and has had a major influence on the modern methods used today. During that historical period, several treaties contained provisions for the resolution of conflicts, laying the foundation for today's inter-state arbitration. The development of inter-state arbitration was significantly influenced by two main historical traditions, each of which was essential to its growth.⁶ One notable way is the diplomatic approach, where governments have traditionally supported the use of arbitration as a diplomatic means of resolving disputes.

A. *Jay's Treaty*

The diplomatic roots of international arbitration go back to a time when governments actively sought peaceful means to resolve conflicts.⁷ There was no clearly defined legal structure in place for the process's early phases before the publication of Jay's Treaty in 1794.⁸ In particular, it shaped the relationship between the United States and Great Britain. This important agreement marked a turning point in the development of inter-state arbitration.

⁵ Shonk, Katie. 2023. "International Arbitration: What It Is and How It Works." PON - Program on Negotiation at Harvard Law School. March 20, 2023. <https://www.pon.harvard.edu/daily/international-negotiation-daily/international-arbitration-what-it-is-and-how-it-works/>.

⁶ Veeder, V. V., 'Inter-State Arbitration', in Thomas Schultz, and Federico Ortino (eds), The Oxford Handbook of International Arbitration, Oxford Handbooks (2020; online edn, Oxford Academic, 8 Oct. 2020), <https://doi.org/10.1093/law/9780198796190.003.0008>

⁷ Keller, Alexis, 'Inter-State Arbitration in Historical Perspective', in Thomas Schultz, and Federico Ortino (eds), The Oxford Handbook of International Arbitration, Oxford Handbooks (2020; online edn, Oxford Academic, 8 Oct. 2020), <https://doi.org/10.1093/law/9780198796190.003.0035>

⁸ Gélinas, Fabien. "The Legal Framework of Arbitration: International and National Sources." In Cambridge Compendium of International Commercial and Investment Arbitration, edited by Stefan Kröll, Andrea K. Bjorklund, and Franco Ferrari, 81-103. Cambridge: Cambridge University Press, 2023. doi:10.1017/9781108304467.005.

Some legal scholars, such as Professor Alexis Keller, argue that the Jay Treaty is recognized as the foundation of modern arbitration.⁹

The Jay Treaty of 1794 stands out as a turning point in the development of inter-state arbitration.¹⁰ and international arbitration in general.

This treaty established a standard for offering a formalized legal framework for the settlement of disputes between the United States and Britain, and it set a framework that would develop inter-state arbitration in the future.¹¹ As a legitimate and enforceable means of settling disputes between sovereign bodies, it helped to legitimize inter-state arbitration. Moreover, it should also be noted that this treaty was considered to be the first treaty negotiated between the countries in dispute, being the United States of America and Britain, that aimed to prevent war and develop a model for other nations to do the same. This is because this treaty established that the authority to solve disputes is limited to “commission”, today known as “tribunal”. Moreover, since this treaty also required all commission members to take the oath mentioned in Article 6¹² The commission’s main focus while negotiating peace was to prevent war and to help the two nations with rights and duties, and as an independent commission, to attempt to reach an equitable agreement and solve their dispute. In addition to that, the Jay Treaty also introduced several other organizing principles, such as the power of the commission to determine the applicable jurisdiction and the commission decision is obligatory to all parties, which have been recognized as the basis and modern forms of arbitration.

We can deduce that the Jay Treaty was notable for its innovative use of independent commissioners. These commissions marked a shift in the approach to international dispute resolution. As a result of this innovative use of independent commissioners and revolutionary tools, the settlement of inter-state conflicts acquired a judicial component, which gained widespread acceptance following the turn of the nineteenth century.

B. Treaty of Washington

In the nineteenth century, diplomacy expanded significantly, and arbitration increasingly emerged as an accepted method for resolving disputes between states. One important example is the Treaty of Washington of 1871, concluded between the United States and Great Britain, which is widely regarded as a major development in the history of inter-state arbitration. The treaty addressed several disputes between the two nations, most notably the Alabama Claims, which centered on Britain’s role during the American Civil War, particularly the construction of Confederate vessels in British shipyards. These ships caused considerable damage to Union commercial shipping,

⁹ Keller, Alexis, 'Inter-State Arbitration in Historical Perspective', in Thomas Schultz, and Federico Ortino (eds), *The Oxford Handbook of International Arbitration*, Oxford Handbooks (2020; online edn, Oxford Academic, 8 Oct. 2020), <https://doi.org/10.1093/law/9780198796190.003.0035>

¹⁰ Salacuse, Jeswald W. “*Interstate Arbitration: ... Settling Disputes Which Diplomacy Has Failed to Settle*” *Negotiation Journal*, April, 2022 <https://doi.org/10.1111/nejo.12393>.

¹¹ Jay’s Treaty | the Canadian Encyclopedia.” [Www.thecanadianencyclopedia.ca. https://www.thecanadianencyclopedia.ca/en/article/jays-treaty](https://www.thecanadianencyclopedia.ca/en/article/jays-treaty).

¹² “Avalon Project - British-American Diplomacy : The Jay Treaty; November 19, 1794.” n.d. Avalon.law.yale.edu. Accessed December 26, 2023. https://avalon.law.yale.edu/18th_century/jay.asp#art6.

prompting the United States to seek reparations through diplomatic means. Rather than allowing tensions to escalate further, both states agreed to submit the dispute to an international arbitral tribunal. The tribunal, composed of neutral arbitrators, was tasked with examining the claims objectively and issuing a binding decision. This marked an important shift in the way states approached international conflict, as it demonstrated a growing willingness to rely on legal and diplomatic mechanisms instead of force. The Treaty of Washington, therefore, became a significant milestone in the development of peaceful dispute resolution, helping to strengthen confidence in arbitration as a practical alternative to war and influencing later developments in international law and cooperation.¹³

C. First and Second Hague Conferences

These efforts culminated in the First and Second Hague Conferences of 1899 and 1907, respectively, which played a pivotal role in the development of inter-state arbitration and the institutionalization of the Permanent Court of Arbitration.¹⁴

In these conferences, representatives of several countries gathered to discuss important issues related to international peace and security, emphasizing the essential need to codify the peaceful resolution of disputes and standardize arbitration procedures. These conferences are important because they collectively seek to support and legitimize inter-state arbitration as the primary means of resolving conflicts between sovereign states. The adoption of a multilateral agreement known as the Pacific Settlement of International Disputes was a major outcome of the First Hague Conference.¹⁵

The adoption of this Convention highlighted the significance of arbitration as a means of resolving disputes “which diplomacy has failed to settle.”¹⁶ and also resulted in the establishment of the Permanent Court of Arbitration (PCA) as an institution handling inter-state and international arbitration.¹⁷ The creation of the institution marked an important step forward in the development of a systematic approach to the resolution of national disputes. Its permanent structure, which allows governments to voluntarily submit their conflicts to an impartial tribunal, was a departure from the makeshift arrangements that characterized earlier arbitration proceedings.¹⁸

The establishment of a permanent institution during the conference paved the way for continuous conflict resolution and laid the foundation for a more systematic and organized arbitration process.

¹³ U.S. Department of State, Office of the Historian. “Treaty between the United States and Great Britain—Claims, Fisheries, Navigation of the St. Lawrence, &c., American Lumber on the River St. John, Boundary.” Office of the Historian, Document 257, <https://history.state.gov/historicaldocuments/frus1871/d257>

¹⁴ “Hague Conferences (1899, 1907).” <https://www.oxfordbibliographies.com/display/document/obo-9780199743292/obo-9780199743292-0115.xml>.

¹⁵ The Hague Conferences and the Creation of the Permanent Court of Arbitration.” Arbitration Insights. <https://arbitrationinsights.com/introduction-to-international-commercial-arbitration/1-3the-hague-conferences-and-the-creation-of-the-permanent-court-of-arbitration/#:~:text=%283%29%20A%20significant%20outcome%20of%20the%20conference%20was>

¹⁶ Salacuse, Jeswald W. “*Interstate Arbitration: ... Settling Disputes Which Diplomacy Has Failed to Settle*” Negotiation Journal, April, 2022 <https://doi.org/10.1111/nejo.12393>.

¹⁷ Moreno, Maria Belen. 2023. “From Its Origins to Actuality: The Permanent Court of Arbitration.” Kluwer Arbitration Blog. September 23, 2023. <https://arbitrationblog.kluwerarbitration.com/2023/09/23/from-its-origins-to-actuality-the-permanent-court-of-arbitration/>.

¹⁸ History | PCA-CPA.” <https://pca-cpa.org/en/about/introduction/history/>.

Moreover, the Second Hague Conference, in 1907, also played a significant role. The structure for arbitration, which aimed to facilitate the peaceful settlement of conflicts between nations, was expanded through the efforts made during the Second Hague Conference. Delegates to this second conference deliberated at length on a wide range of issues, such as rules and traditions of war and the peaceful settlement of international conflicts. These conferences significantly strengthened the legitimacy of arbitration as one of the principal peaceful means of resolving disputes between sovereign states. In addition, the conference's support of mandatory arbitration for some kinds of disputes is a significant move. The Second Hague Conference proved instrumental in advancing international mechanisms for conflict resolution by strengthening existing frameworks and introducing new approaches toward achieving peace among nations.¹⁹

Although it was not widely embraced, this idea was an innovative attempt to require arbitration in some situations, which strengthened arbitration's standing as a respectable and desirable means of resolving inter-state disputes. However, for some legal experts, the outcomes of the Second Hague Peace Conference in 1907 were not entirely satisfactory in terms of mandatory arbitration.²⁰

In my opinion, and based on what has been mentioned above, the historical evolution of inter-state arbitration was greatly influenced by the First and Second Hague Conferences. These events represented an international community-wide effort to codify norms and values supportive of preserving world peace. The establishment of the PCA and the debates surrounding mandatory arbitration highlighted the growing international recognition of peaceful dispute settlement as necessary for the stability and advancement of the international framework.

However, despite this advancement, World War I occurred. Yet, in the aftermath of this war, the League of Nations represented a major international initiative to use arbitration and collective security to avoid potential wars. The League helped clear the way for the establishment of the Permanent Court of International Justice (PCIJ) in 1922 while encountering obstacles in accomplishing its objectives. The establishment of PCIJ as the first permanent international court capable of settling nations' disputes was a milestone advancement in history. Yet, despite this advancement, World War II occurred, which shed light on the necessity to re-evaluate the global systems for resolving disputes. Therefore, the United Nations (UN), known as a multinational organization committed to implementing security and peace between nations, which was founded in 1945, has played a significant role.²¹ since the International Court of Justice (ICJ), as the principal judicial organ of the United Nations, became the central judicial institution for the adjudication of disputes between states.

This change demonstrated a persistent dedication to using diplomacy and international law to avoid and end wars on a worldwide scale.²²

¹⁹ Veeder, V. V., 'Inter-State Arbitration', in Thomas Schultz, and Federico Ortino (eds), *The Oxford Handbook of International Arbitration*, Oxford Handbooks (2020; online edn, Oxford Academic, 8 Oct. 2020), <https://doi.org/10.1093/law/9780198796190.003.0008>

²⁰ Ibid.

²¹ United Nations, "The 4 Pillars of the United Nations." United Nations. 2022. <https://www.un.org/en/model-united-nations/4-pillars-united-nations>.

²² "History | International Court Of Justice." <https://icj-cij.org/history/>

Moreover, the international community observed significant improvements in inter-state arbitration in the years following World War II. Although the ICJ developed into a key institution, it was supported by several other systems. Ad hoc tribunals were created to handle particular problems like trade disputes and territorial conflicts. Examples include arbitral tribunals constituted under the United Nations Convention on the Law of the Sea (UNCLOS). Specialized arbitral organizations emerged to prominence, demonstrating how arbitration may be customized to meet a wide range of challenges.

Examining inter-state arbitration from a historical perspective is essential for us to understand its development and to consider how technology, as well as Artificial Intelligence, will impact this field in the future, whether from a legal or historical standpoint. From this historical aspect, one can observe substantial changes in the inter-state arbitration scene. The dynamic character of global governance is reflected in the evolution of inter-state arbitration from conventional diplomatic conversations to a more codified and structured process. But what are the legal aspects that have contributed to its developing structure?

II. Legal Aspect

One important mechanism for settling disputes between sovereign states, outside permanent international courts, is inter-state arbitration. It is an example of the state sovereignty concept in action, highlighting the independence of states in resolving disputes.

Over time, there has been a considerable evolution in the way of settling conflicts between sovereign nations through an impartial and independent tribunal through inter-state arbitration. According to some legal experts, although inter-state arbitration has been a forgotten method for dispute resolution compared to other methods, several cases have shown its significance.²³

For example, the 1986 decision of the UN Secretary-General in the Rainbow Warrior dispute, which arose between France and New Zealand and was later followed by arbitral proceedings, required France to compensate New Zealand for the actions of French agents who sank the Rainbow Warrior. Although the primary legal focus was on reparations, the outcome also contributed to the gradual restoration of diplomatic and economic relations between the two countries.²⁴

Also, the Red Sea Islands Arbitration case, which dealt with the conflicting claims of Eritrea and Yemen over uninhabited rocks in the Red Sea, had the primary legal purpose of resolving territorial disputes. However, its strategic impact extended beyond the legal dimension, providing both states

²³Salacuse, Jeswald W. 2022. “*Interstate Arbitration: ‘... Settling Disputes Which Diplomacy Has Failed to Settle .’*” Negotiation Journal, April. <https://doi.org/10.1111/nejo.12393>.

²⁴ Reports Of International Arbitral Awards, Recueil Des Sentences Arbitrales, Case Concerning the Differences between New Zealand and France Arising from the Rainbow Warrior Affair, 6 July 1986, VOLUME XIX pp. 199-221, United Nations. https://legal.un.org/riaa/cases/vol_XIX/199-221.pdf.

and the global community with a peaceful and legally structured means of resolving a potentially dangerous military confrontation in 1995 that threatened a crucial global trade route.²⁵

These cases highlight the supportive role that inter-state arbitration can play in international negotiations and relations. Yet not only cases but also treaties, conventions, regulations, courts, and institutions are a major factor in defining the complex legal framework and the significance of inter-state arbitration. Therefore, this section will further explore the legal framework and significant treaties, regulations, institutions, and courts that have shaped the nature and evolution of inter-state arbitration.

A. The United Nations Charter & Treaty on the Functioning of the European Union (TFEU)

It is known that the vital process for settling disagreements between sovereign states, which is based on the fundamental ideas of international law, is inter-state arbitration.²⁶ Conflicts between sovereign nations are settled through an established and agreed-upon legal procedure in inter-state arbitration. Unlike private international arbitration, inter-state arbitration is not governed by a single comprehensive legislative framework, but instead operates through treaties, special agreements, institutional rules, and general principles of international law.

Fundamentally, the United Nations Charter, a landmark agreement enacted in 1945 that provided the basis for modern international relations, establishes the framework under which inter-state arbitration law operates.²⁷ Although the UN Charter does not provide specific arbitration rules, however, it promotes the use of peaceful conflict resolution procedures between states, such as arbitration was it have stated in Article 33 that “The parties to any dispute, the continuance of which is likely to endanger the maintenance of international peace and security, shall, first of all, seek a solution by negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement, resort to regional agencies or arrangements, or other peaceful means of their own choice”.²⁸ This shows that arbitration is one of the procedures that states have access to for the peaceful settlement of their international conflicts, as stated in the UN Charter. Although the UN Charter only mentions arbitration as one of the ways for states to settle their disputes without referring to any specific arbitration rules, it is considered fundamental since it provides guidelines and procedures for the peaceful resolution of disputes between member states.

Also, Article 2 (3) of the UN Charter states that “All Members shall settle their international disputes by peaceful means in such a manner that international peace and security, and justice, are not endangered”.²⁹ We can deduce that this article places a definite and obligatory duty on the member nations. This article requires states to "settle their international disputes by peaceful means," in addition to encouraging them to do so. This order demonstrates a deliberate effort to

²⁵ Eritrea/Yemen - Sovereignty and Maritime Delimitation in the Red Sea, Permanent Court of Arbitration (PCA), Case Number 1996-04, Final Award 17 December 1999. <https://pca-cpa.org/en/cases/81/>

²⁶ Lim, C. L., ed. “Inter-State Arbitration and the Pursuit of Peace.” Part. In *The Cambridge Companion to International Arbitration*, 307–88. Cambridge Companions to Law. Cambridge: Cambridge University Press, 2021.

²⁷ Loris Marotti, Paolo Palchetti “*Dispute Settlement in International Law*”, Oxford Bibliographies (2017) <https://www.oxfordbibliographies.com/display/document/obo-9780199796953/obo-9780199796953-0074.xml>.

²⁸ United Nations “*United Nations Charter*.” <https://www.un.org/en/about-us/un-charter/full-text>.

²⁹ Ibid.

promote international agreement and discourage the use of force or hostilities to settle disputes. Moreover, Article 2(4) of the UN Charter states, "All Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the Purposes of the United Nations,"³⁰ meaning states should not use force or undermine their political or territorial independence, or against any territorial integrity or political independence of other states. This provision further highlights the commitment of member nations to uphold the UN Charter ideas and purposes. This restriction on powerful activities strengthens the world's determination to eliminate aggressive conduct and encourages diplomacy as a better conflict resolution technique. Moreover, international arbitration, especially inter-state arbitration, serves as a crucial mechanism and method for accomplishing the UN Charter's aims and objectives.³¹ When nations freely utilize arbitration to resolve disputes, this action aligns with the UN Charter's high ideals and shows its commitment to international law. The UN Charter, which bans the use of force between states, prompts and encourages states to use arbitration as a method to solve disputes. Therefore, states must employ arbitration because the Charter prohibits force and supports peaceful dispute resolution. Thus, the international community's continued use of arbitration, especially inter-state arbitration between states, indicates their commitment to peace, justice, and the rule of law.

In addition to that, the Treaty on the Functioning of the European Union (TFEU) also plays an important role in organizing the relationship between EU countries and refers to arbitration to solve any dispute that arises between them. Yet, although the primary objective of this treaty was to strengthen the economic and political integration between the EU countries, its influence expanded to inter-state arbitration to be used to solve any dispute between EU countries. Article 272 of the TFEU states that "The Court of Justice of the European Union shall have jurisdiction to give judgment according to any arbitration clause contained in a contract concluded by or on behalf of the Union, whether that contract be governed by public or private law".³² We can deduce from this article that the Court of Justice of the European Union (CJEU) has the authority to settle any disputes that arise from an agreement, whether public or private, as long as it involves the EU. Moreover, this article, in addition to stating that the CJEU is the highest authority in the EU, also gave it the authority to extend its jurisdiction to handle cases that include arbitration clauses related to the EU. This reference to the arbitration clause reflects the EU's recognition and acceptance of arbitration, including inter-state arbitration, as a dispute resolution mechanism and acknowledges its effectiveness.

Furthermore, Article 273 of the TFEU states that "The Court of Justice shall have jurisdiction in any dispute between Member States which relates to the subject matter of the Treaties if the dispute is submitted to it under a special agreement between the parties".³³ We can deduce that this article grants the CJEU the authority and jurisdiction to hear and settle the disputes that arise between member states of the EU related to a wide range of disputes related to the EU treaties. In other

³⁰ Ibid.

³¹ Gray, C., and B. Kingsbury. 1993. "Developments in Dispute Settlement: Inter-State Arbitration since 1945." *British Yearbook of International Law* 63 (1): 97–134. <https://doi.org/10.1093/bybil/63.1.97>.

³² Treaty on the Functioning of the European Union, Eur-Lex.europa.eu, Article 272, Page C 326/165 <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=LEGISSUM:4301854>.

³³ Ibid.

words, this article emphasizes the European Union's dedication to settling legal disputes through peaceful means, highlighting the distinctive fusion of lawful and transnational frameworks within the EU. This provides a consensual mechanism through which disputes between Member States concerning the subject matter of the Treaties may be submitted to the CJEU, thereby reinforcing the EU's preference for judicial settlement within its own legal order. The utilization of alternative dispute resolution signals a willingness by members to cooperatively and collaboratively work to find mutually agreeable solutions, maintaining the overarching objectives of cooperation and integration that define the European project. Overall, this treaty emphasizes the Union's prominence on established legal norms and procedures to prevent escalation of conflicts while furthering the unification of Europe.

B. The New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards

Also, the reference to the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards should be made. Although the New York Convention was not designed specifically for inter-state arbitration, it may still be relevant to the recognition and enforcement of arbitral awards involving states.³⁴ As a quick overview of this convention, the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards establishes a framework for enforcing arbitral awards across its more than 160 signatory nations. Its provisions are primarily applied in the context of international commercial arbitration, although they may also become relevant where a state or state entity is party to an arbitral award. This Convention strengthens the effectiveness of arbitration by enhancing the cross-border recognition and enforcement of arbitral awards, thereby reinforcing the reliability and legal force of arbitration as a dispute resolution mechanism. By providing a standardized structure accepted globally, the Convention reinforces arbitration as a preferred process for adjudicating disputes in a way that ensures finality and legal force for those settlements.

Taken together, the UN Charter, the TFEU, and the New York Convention illustrate different legal dimensions relevant to inter-state dispute settlement and arbitration, including peaceful dispute resolution, regional judicial mechanisms, and the recognition and enforcement of arbitral awards. The TFEU provides a nuanced approach within the EU context. The New York Convention offers a globally recognized framework for enforcing arbitral awards. Collectively, these instruments reflect the evolving nature of international relations, emphasizing the importance of peaceful mechanisms and established legal frameworks in navigating the complexities of disputes between states. Their combined provisions demonstrate an ongoing commitment to non-violent cooperation and the rule of law in managing disagreements that certainly arise within the international community.

³⁴ "UNCITRAL UNITED NATIONS COMMISSION on INTERNATIONAL TRADE LAW UNITED NATIONS UNCITRAL Secretariat Guide on the Convention on the Recognition and Enforcement of Foreign Arbitral Awards." n.d. https://uncitral.un.org/sites/uncitral.un.org/files/mediadocuments/uncitral/en/2016_guide_on_the_convention.pdf.

In addition to the aforementioned information, a study on arbitral tribunals and courts of inter-state arbitration regulation is essential. To do so, we will examine their functions, development, and influence on international conflict resolution.

C. The Permanent Court of Arbitration (PCA) & The International Court of Justice (ICJ), and the Ad Hoc Tribunals

The PCA is an intergovernmental organization that facilitates arbitration and other dispute resolution mechanisms, including inter-state arbitration.³⁵ The PCA's inter-state arbitration emphasizes peaceful diplomatic dispute resolution. In addition to mediating peaceful resolutions to international issues, the PCA draws on its long history as the preeminent arbitration forum for state disputes. The fact that the parties have chosen arbitration over escalating geopolitical tensions demonstrates their willingness to negotiate and compromise. A fair and orderly process is guaranteed by the PCA when governments participate in arbitration. This system eliminates the need for unstable confrontations by enhancing countries' capacity to address sensitive problems via respectful dialogue and established legal procedures in international relations. The PCA promotes the peaceful resolution of disputes in conformity with international law to maintain global stability.

As mentioned above, the PCA is an intergovernmental organization that facilitates arbitration and other dispute resolution mechanisms, including inter-state arbitration. Global diplomatic dispute resolution is the focus of inter-state arbitration under the PCA. In keeping with its historic tradition of impartiality, the PCA mediates peaceful settlements to international disputes, carrying forward one of the earliest permanent institutional frameworks for international arbitration. These arbitration procedures demonstrate a dedication to genuine concessions and good faith instead of geopolitical conflicts. The arbitration rules of the PCA encourage orderly and impartial proceedings between states, allowing them to amicably settle disputes and disagreements within a well-established legal framework.

This helps to avoid destabilizing confrontations. To rephrase, the PCA's goal is to keep the world peaceful by advocating for the settlement of conflicts via legal means.

As stated in the historical aspect above, the PCA has been an integral part of inter-state arbitration since its establishment under the 1899 Hague Convention for the Pacific Settlement of International Disputes.³⁶ The PCA was founded, and standards for the peaceful settlement of international disputes among sovereign states were laid forth in the Hague Convention for the Settlement of International Disputes in the Pacific. Countries have acknowledged the significance of a neutral third party and the capacity of an impartial body to assist them in settling complex legal and geopolitical matters via PCA inter-state arbitration. The countries' use of the PCA shows

³⁵ "PCA Arbitration Rules | PCA-CPA." Pca-Cpa.org. <https://pca-cpa.org/en/services/arbitration-services/pca-arbitration-rules-2012/>.

³⁶ Moreno, Maria Belen, "From Its Origins to Actuality: The Permanent Court of Arbitration." Kluwer Arbitration Blog. September 23, 2023. <https://arbitrationblog.kluwerarbitration.com/2023/09/23/from-its-origins-to-actuality-the-permanent-court-of-arbitration/>.

their desire to address their disagreements via cooperation rather than unilateral moves that may escalate tensions. The PCA has assisted states in resolving complex legal and political disputes.

As previously indicated, the PCA facilitates the peaceful settlement of disputes in a manner consistent with the principles of the UN Charter. Although the PCA is not directly governed by the UN Charter, its commitment to peaceful dispute resolution aligns with the UN Charter's main aim of avoiding war and promoting goodwill between nations. The PCA maintains the UN Charter's peaceful conflict settlement principles. The UN Charter's overarching goal is a more equitable and cooperative global order that upholds nations' right to self-determination within international law and diplomacy, which the PCA seeks to achieve by adjudicating international matters.

Moreover, the ICJ is another renowned international court that solves disputes between states. The ICJ, also known as the "World Court," is the main UN judicial body.³⁷ The ICJ, by contrast, is a judicial body that adjudicates legal disputes between states and provides advisory opinions on legal questions referred to it by authorized international organs and agencies. It is also important to note that although the PCA and ICJ are two famous international entities that serve to resolve disputes between states, ad hoc arbitration tribunals may also address particular matters between independent states. These temporary ad hoc arbitration tribunals are constituted case-by-case by nations in a conflict, where they typically agree on their membership and procedures of the process.³⁸ While permanent institutions offer a steady basis, the ad hoc tribunal offers flexibility to be represented and customize the arbitration process to suit their dispute, noting that international law may adapt to suit the states in dispute via cooperative and consensus-based solutions.

Finally, regional groups also have conflict resolution mechanisms, in addition to global institutions. One example is the Court of Justice of the European Union, which mediates disputes between EU member states over EU law and regulations. In a similar vein, the Court of Justice of the Economic Community of West African States (ECOWAS) exercises jurisdiction over certain disputes arising under ECOWAS law and contributes to regional dispute settlement within West Africa. To improve collaboration and settle difficulties between nearby state parties, regional organizations establish independent arbitration mechanisms for inter-state disputes that arise within their jurisdictions. While international tribunals serve an important purpose, it is important to have separate legal systems at the continental level to address the specific political and economic concerns of neighbors.

To sum up, in this chapter, we have navigated into the dynamic evolution of inter-state arbitration from both historical and legal perspectives. Through this dynamic navigation of the historical and legal aspects of inter-state arbitration, we will be able to have a strong ground to compare it in the

³⁷ Ambassador Juan Manuel Gómez-Robledo Verduzco, "*The International Court of Justice: A Bright Light in Dark Times*", Just Security, 2022. <https://www.justsecurity.org/83723/the-international-court-of-justice-a-bright-light-in-dark-times/>.

³⁸ "Ad Hoc Arbitration—an Introduction to the Key Features of Ad Hoc Arbitration | Legal Guidance | LexisNexis." [Www.lexisnexis.co.uk. https://www.lexisnexis.co.uk/legal/guidance/ad-hoc-arbitration-an-introduction-to-the-key-features-of-ad-hoc-arbitration](https://www.lexisnexis.co.uk/legal/guidance/ad-hoc-arbitration-an-introduction-to-the-key-features-of-ad-hoc-arbitration).

coming chapter with international investment and international commercial arbitration, along with its intersection with new technological tools, including AI tools.

In conclusion, revisiting the main research question, how has inter-state arbitration evolved from both legal and historical perspectives? And the primary hypothesis that inter-state arbitration has evolved significantly over time due to the increasing codification of international legal principles, as well as historical and technological shifts in global power dynamics, we can affirm, based on the historical and legal aspects discussed above, that this hypothesis holds. The evolution of inter-state arbitration as a branch of international arbitration has been shaped by legal codification and historical and technological shifts. The growing reliance on arbitration in modern international relations demonstrates its continued relevance as a peaceful dispute-resolution mechanism in an increasingly interconnected world.

CHAPTER 2

Investor–State Tribunals and the Emergence of International Investment Arbitration

International Investment Arbitration is another type or form of international arbitration used to resolve and settle disputes between states and foreign investors.³⁹ While inter-state arbitration solves disputes between nations or states, international investment arbitration solves disputes between states and foreign investors that arise in the context of investment treaties or investment agreements issued between a state and the foreign investor. The main purpose of international investment arbitration is to provide a neutral mechanism for solving disputes that arise between a state and a foreign investor related to investment matters and to protect foreign investment.⁴⁰

How has international investment arbitration evolved from both legal and historical perspectives? To answer this question, two exclusive aspects should be taken into consideration to have a full understanding of the nature of international investment arbitration and to help us understand its intersection with technology and AI in the coming chapters. These aspects include the historical and legal aspects.

By examining these two aspects, international investment arbitration has evolved significantly over time due to the increasing codification of international investment law, the proliferation of bilateral and multilateral investment treaties, as well as historical and economic shifts in global investment dynamics. Readers will gain a thorough understanding of the evolving dynamics of international investment arbitration. This information is the basis for a thorough understanding of the following chapters.

I. Historical Aspect

International investment arbitration has been a significant mechanism for solving disputes arising between states and foreign investors throughout history. International investment arbitration gained importance as a result of the increasing need for a specialized mechanism and framework that settles disputes and protects investment matters. Therefore, in this section, we will examine the historical development of this type of arbitration. To do so, this section will provide a detailed examination and a journey through the history of international investment arbitration from its creation until today.

Although the history of international arbitration dates back to the Ancient and the Middle Ages, when states during that time started setting up international claims, especially after the Jay Treaty, the wave of international investment arbitration began with the increased evolution of the law on international protection of foreign investment and the formation of state responsibility.⁴¹ In other words, before international investment arbitration became the core and significant mechanism in

³⁹ C.L. Lim, Jean Ho, “*International Investment Arbitration*”, Oxford Bibliographies, 2019 <https://www.oxfordbibliographies.com/display/document/obo-9780199796953/obo-9780199796953-0135.xml>.

⁴⁰ Mahawar, Sneha, “*International Investment Arbitration*” IPleaders, March 31, 2023. <https://blog.ipleaders.in/international-investment-arbitration/#:~:text=It%20is%20a%20type%20of%20arbitration%20that%20resolves.>

⁴¹ C.L. Lim, Jean Ho, “*International Investment Arbitration*”, Oxford Bibliographies, 2019 <https://www.oxfordbibliographies.com/display/document/obo-9780199796953/obo-9780199796953-0135.xml>.

solving disputes between states and foreign investors, investors' way to claim their rights was by seeking protection from their home state. However, there was no guarantee that the home state would satisfy this claim. Therefore, with the increase in investment matters between states and foreign investors, it became essential to solve and safeguard foreign investment and investors. Therefore, from here, new methods of investment protection emerged, both contractual and treaty-based protection.

A. The Foundation and Rise of Bilateral Investment Treaties (BITs)

In the post World War II period, the landscape of international investment arbitration underwent a major transformation with the international community's efforts to establish Bilateral Investment Treaties (BITs). This period was significant because many states were working to rebuild and strengthen their economic systems in the aftermath of World War II, including through the encouragement of foreign investment. The establishment of BIT was known as the state's efforts to create a diplomatic relationship between states that safeguards and encourages foreign investment, through including provisions for dispute resolution.

The origin of international investment arbitration during this time was due to the increased need to have a framework that governs foreign investment and protects investors' rights. As a result, and after realizing the increased benefits of cross-border investments, many states started to explore several ways to enhance such economic and investment activities. For example, the United States created the Overseas Private Investment Corporation (OPIC) in 1971. This corporation's main aim was to facilitate American investment by providing insurance, financial assistance, and even investment funds. Moreover, this corporation, through providing risk insurance for American businesses that invest in states that pose some threat to their investment, has encouraged and taken a significant step towards increasing investment and safeguarding economic and investment growth.⁴²

However, the complication of international investment made states realize that the current framework applied is still not sufficient in providing the required safeguards and settlement of disputes. The need to have diplomatic courts and tribunals that settle international investment disputes led to the evolution of international investment arbitration as a dispute resolution method. Therefore, we can realize that the early foundation age was the starting point of international investment arbitration and reflected the need to have a legal, neutral, and efficient framework to address the increasing investment challenges. Therefore, from here, the expansion of investment arbitration began. Organizing several conferences that aim to promote this expansion of investment between states, such as the United Nations Conference on Trade and Development (UNCTAD), which, as an intergovernmental organization within the United Nations Secretariat, aimed to promote international relations and trade within countries, mainly developing countries, especially after recognizing the significance of investment between countries.⁴³ Moreover, the UNCTAD

⁴² JAMES CHEN, "Overseas Private Investment Corporation (OPIC)" Investopedia, 2022 <https://www.investopedia.com/terms/o/overseas-private-investment-corporation.asp>.

⁴³ UNCTAD. 2019. "UNCTAD | Home." Unctad.org. 2019. <https://unctad.org/>.

played an important role in addressing difficulties that arose from foreign investment that led to and helped in the creation of the International Center for Settlement of Investment Disputes (ICSID) in 1966.

B. The Establishment of ICSID (1966): A Turning Point in International Investment Arbitration

With all these efforts, the ICSID creation was under the Convention on the Settlement of Investment Disputes between States and Nationals of Other States. Also known as the ICSID Convention, it has created the International Center for Settlement of Investment Disputes. In other words, the creation of ICSID was launched to resolve investment disputes via investor-state arbitration, like another World Bank program that used political risk insurance during that period. ICSID was established to provide a neutral and institutionalized forum for the conciliation and arbitration of investment disputes between states and foreign investors. Under ICSID, the disputing parties were given the freedom to select the legal standards that they would accept as the governing law of arbitration, which was frequently a contract between the investor and the host state.⁴⁴

Therefore, the ICSID was a major step as it established the mechanism that works for the sake of the investor and the host state.⁴⁵ The ICSID Convention established ICSID's independence to function as a separate international organization. This convention stated clearly the framework and mechanism of applying arbitration, requesting that the host state and foreign investor consent to apply ICSID arbitration.⁴⁶ This voluntary nature highlighted the importance of mutual consent in investment dispute resolution. Moreover, the ICSID Convention's formation of an unbiased arbitration framework outside national legal systems was a significant aspect of this convention. The legal immunities provided to ICSID and its staff facilitated an impartial and effective dispute resolution mechanism. In addition, the Convention provided for the recognition and enforcement of arbitral awards in contracting states, requiring them to be treated similarly to final judgments of domestic courts. A set of arbitration rules addressing different parts of the processes was also supplied by the ICSID Convention. These regulations helped bring international investment law into codification, which improved the uniformity and predictability of dispute settlement. This convention was drafted and conceived by the World Bank framework and came into effect in 1966, including the use of arbitration as a dispute resolution mechanism in solving disputes, and having this convention ratified by several countries, including the developing and industrialized ones, shows the acceptance and widespread use of international investment arbitration.

The creation of ICSID under the World Bank framework marked a turning point in international investment arbitration by establishing a specialized and neutral forum for resolving investment

⁴⁴ Howse, Rob. 2019. "International Investment Law and Arbitration: A Conceptual Framework," Institute for International Law and Justice, January. <https://doi.org/10.5771/9783845299051-363>.

⁴⁵ "United Nations Conference On Trade And Development Course On Dispute Settlement International Centre For Settlement Of Investment Disputes 2.1 Overview United Nations New York and Geneva, 2003." https://unctad.org/system/files/official-document/edmmisc232overview_en.pdf.

⁴⁶ "The History of the ICSID Convention | ICSID." Icsid.worldbank.org. <https://icsid.worldbank.org/resources/publications/the-history-of-the-icsid-convention>.

disputes. The establishment of an investment dispute resolution forum based on the concepts of impartiality, enforceability, and consent allowed for a more organized, equitable, and predictable setting for international investments and economic growth. The ICSID Convention and its subsequent decisions have left an indelible mark on the international investment and dispute resolution landscape.

C. Expansion and Institutionalization

The evolution of international investment arbitration increased further. With investment treaties and arbitration bodies increasing between 1980 and 1990, international investment arbitration changed dramatically due to this increase and growth. BIT emerged in the post World War II period as states sought to attract foreign investment with attractive legal frameworks that protected investors. As a result of this advancement, a new stage of cross-border economic transactions was introduced to the field of international investment arbitration. In other words, countries' efforts were to attract investors through the BIT since investors were protected by these treaties' ability to repatriate revenues, restrictions against unfair expropriation, and the use of arbitration as the mechanism to resolve disputes that could arise between investors and host states.⁴⁷ This shift and advancement permitted private investors to actively engage in arbitration cases against sovereign governments, breaking the conventional form of inter-state conflict resolution. Moreover, the protection and benefits that these treaties provide to investors have increased in a very significant manner. In addition to that, further increases in international investment also occurred in regional investment treaties. For example, the North American Free Trade Agreement (NAFTA), which entered into force in 1994, marked a significant development in international investment arbitration. It was later replaced by the United States–Mexico–Canada Agreement (USMCA) in 2020. NAFTA was one of the largest regional trade agreements among Canada, the United States, and Mexico, and it aimed to reduce trade barriers between the three countries. By facilitating cross-border trade and investment, the agreement expanded investment opportunities.⁴⁸ One of its most significant features was that it allowed foreign investors to bring claims directly against host states through investor–state dispute settlement (ISDS).⁴⁹

The increase in investment agreements at a regional and international level and disputes that arose from these agreements made the need to have organized arbitral institutions to organize and handle the arbitration cases that arose from these treaties significant. To meet this need, the International Chamber of Commerce (ICC), Stockholm Chamber of Commerce (SCC), and ICSID were founded to handle resolving investor-state and related international disputes. These organizations helped governments and investors resolve investment disputes in a fair, efficient, and impartial manner. Yet, the increase in investment cases raised questions about the arbitration process's legality, transparency, and consistency. Several nations seek to create the BIT and have misgivings about the ICSID Convention due to concerns about the arbitration process's validity, transparency,

⁴⁷ Bjork, Charles. 2015. “*Guides: International Investment Law Research Guide: Bilateral Investment Treaties (BITs)*,” August.

⁴⁸ Kimberly Amadeo, “North American Free Trade Agreement (NAFTA)” The Balance, 2022 <https://www.thebalancemoney.com/nafta-definition-north-american-free-trade-agreement-3306147>.

⁴⁹ Weintraub, Sidney. 1992. “North American Free Trade and the European Situation Compared.” *International Migration Review* 26 (2): 506. <https://doi.org/10.2307/2547069>.

and uniformity.⁵⁰ It is worth noting that the majority of arbitration procedures included in investment treaties do not address transparency at all, failing to either require disclosure or mandate confidentiality. As a result, an improvement of the applicable framework was needed. The United Nations Commission on International Trade (UNCITRAL) Arbitration Rules played an important role as they have shaped the framework governing international investment and handled the legality, transparency, and even consistency challenges in the arbitration process and proceedings.⁵¹ Not only did the UNCITRAL provide Arbitration Rules that provide a set of procedural guidelines, but it also recognized the importance of transparency in investment arbitration in 2013. These rules not only encouraged transparency by making hearings, verdicts, and significant documents public but also enhanced investment dispute settlement legitimacy. UNCITRAL's numerous contributions to international investment processes, legality, openness, and consistency demonstrate its commitment to a fair and predictable global investment environment. UNCITRAL's model legislation, arbitration procedures, transparency requirements, and ISDS reforms have shaped international investment. These activities shape the investment environment with transparency and fairness. UNCITRAL is vital in advancing the rule of law in international operations, even as the world confronts new challenges.

The investment cases kept increasing between investors and states, where, in the early 20th century, several cases were raised before arbitral institutions. It should be noted that the field of investment arbitration has expanded rapidly throughout the last half-century to two decades. According to the ICSID Caseload Statistics, Issue 2023-2, 41 cases were registered under the ICSID Convention and Additional Facility Rules in 2022⁵², and 57 arbitration cases were registered so far in 2023.⁵³ The number of cases shows that cases have increased dramatically since 1966, when the International Centre for Settlement of Investment Disputes (ICSID) Convention took place. Between 1987 and 2020, the UNCTAD released a data report stating that there are around 1,000 investment arbitrations known as investor-state arbitration proceedings, including those that were launched via ICSID and others.⁵⁴ But what are the legal aspects and framework that have contributed to the developing structure of international investment arbitration?

II. Legal Aspect

International investment arbitration represents a procedure and mechanism for foreign investors and states to solve and settle their disputes. As we have seen in the historical section, international investment arbitration is based on treaties, conventions, national laws, and arbitral tribunal

⁵⁰ Denunciation Of The Icsid Convention And Bits: Impact On Investor-State Claims
https://unctad.org/system/files/official-document/webdiaeia20106_en.pdf

⁵¹ Johnson, Lise, and Nathalie Bernasconi-Osterwalder. 2013. "New UNCITRAL Arbitration Rules on Transparency: Application, Content and Next Steps" 4 (4). <https://doi.org/10.7916/d8fq9x6k>.

⁵² International Centre for Settlement of Investment Disputes (ICSID), "ICSID Releases 2022 Caseload Statistics," <https://icsid.worldbank.org/news-and-events/communiques/icsid-releases-2022-caseload-statistics>.

⁵³ International Centre for Settlement of Investment Disputes (ICSID), "ICSID Releases 2023 Caseload Statistics," February 1, 2024, <https://icsid.worldbank.org/news-and-events/news-releases/icsid-releases-2023-caseload-statistics>

⁵⁴ Sup-Joon Byun, Hyungkeun Lee, Shul Park, "Procedural Issues in an Arbitration: Disclosure and Transparency." Globalarbitrationreview.com. <https://globalarbitrationreview.com/guide/the-guide-investment-treaty-protection-and-enforcement/second-edition/article/procedural-issues-in-arbitration-disclosure-and-transparency#footnote-081>.

regulations. In other words, disputes involving cross-border and international investments are handled by international investment arbitration, a highly specialized and intricate area of conflict resolution. Typically, the regulations of an international investment agreement or a BIT govern this kind of arbitration, which is used to settle disagreements between a foreign investor and the host state.⁵⁵ Therefore, this section will explore the legal framework and applicable laws and regulations that govern international investment arbitration and its evolution through time.

We have seen that throughout history, the methods of investment protection have emerged, being both contractual and treaty-based protection. In treaty-based protection and arbitration, typically, for an arbitration proceeding involving an investment treaty to be considered competent, the host state's consent to arbitration is typically expressed in an investment treaty, such as a bilateral investment treaty (BIT), which may be accepted by the foreign investor when initiating proceedings. The treaty in question is often a BIT, which is known as a bilateral investment treaty. Investors who are citizens of a treaty-signing state can accept such a method of dispute settlement as an alternative to domestic court litigation.⁵⁶ However, when it comes to the applicable law that should be applied by the tribunal, it is a difficult question whether it is a contractual or treaty-based dispute. All investment tribunals will inevitably have to deal with the matter of relevant legislation. Still, this remains a complex and often debated issue in the field. Arbitrators base their determination on whether a violation has occurred on the legislation that is relevant to the dispute, which is a very simple concept. Therefore, investment arbitrators must determine the relevant legislation to determine the accountability of the contending party or parties, regardless of whether the disagreement is based on a contract or a treaty. The selection of relevant law, its application, and its confluence with other laws, whether local or international, remain controversial and challenging topics, making these assertions seem deceptively easy.⁵⁷

A. The Role of UNCITRAL and ICSID Arbitration Rules

Besides this matter, we should note that UNCITRAL Arbitration Rules and ICSID play an important role in international investment arbitration under investment treaties, including BIT and NAFTA, which provide arbitration under UNCITRAL and ICSID as an option.⁵⁸ From a statistical aspect, studies throughout history have shown an increase in investment disputes that have been conducted under the ICSID Convention and Arbitration Rules or the UNCITRAL Arbitration Rules. For example, according to the most recent 100 entries (decisions) on the OUP website regarding Investment Claims (IIC), which span from October 2005 to January 2008 and include 75 separate cases, 66 percent of those cases were decided under the ICSID Convention and ICSID

⁵⁵ Mahawar, Sneha. 2023. "International Investment Arbitration." IPleaders. March 31, 2023. <https://blog.ipleaders.in/international-investment-arbitration/>.

⁵⁶ Schreuer, Christoph H. 2015. "Jurisdiction and Applicable Law in Investment Treaty Arbitration." *Transnational Dispute Management* 12 (6).

⁵⁷ Bjorklund, Andrea K., and Lukas Vanhonnaecker. "Applicable Law in International Investment Arbitration." Chapter. In *The Cambridge Companion to International Arbitration*, edited by C. L. Lim, 225–43. Cambridge Companions to Law. Cambridge: Cambridge University Press, 2021.

⁵⁸ Horn, N. 2008. "Current Use of the UNCITRAL Arbitration Rules in the Context of Investment Arbitration." *Arbitration International* 24 (4): 587–602. <https://doi.org/10.1093/arbitration/24.4.587>.

Arbitration Rules, with a further 17.3 percent of those cases being decided under the UNCITRAL Arbitration Rules.⁵⁹

The use of arbitration rules for settling international investment disputes is based on investment treaties that include provisions giving an option for the investor to settle the dispute via arbitration.

B. Arbitration Options in Investment Treaties and Model BITs

As it has been seen in the historical aspect provided above, the fact that we now have that well-structured provision in investment treaties shows the willingness of the parties to solve disputes through arbitration, therefore, constituting a standing offer to arbitrate, which may be accepted by the investor through the initiation of arbitration proceedings. For example, Article 1120 of “Chapter Eleven: Investment” of NAFTA states the arbitration rules that the investor has the option to choose from being, “ (a) the ICSID Convention, provided that both the disputing Party and the Party of the investor are parties to the Convention; (b) the Additional Facility Rules of ICSID, provided that either the disputing Party or the Party of the investor, but not both, is a party to the ICSID Convention; or (c) the UNCITRAL Arbitration Rules”.⁶⁰

History has shown that the use of the above-mentioned arbitration rules was made in several cases and investment treaties. For example, the UNCITRAL Arbitration Rules are the exclusive basis for ad hoc arbitration under some BITs. Cases such as *CME v. Czech Republic*, *European Media Ventures SA v. The Czech Republic*, and *Saluka Investments B.V. v. The Czech Republic* are well-known cases. Another example is the BIT between Argentina and the UK, which states that if the investor and Argentina cannot reach an agreement on which arbitration body to use, after three months, the parties are required to adhere to the rules of UNCITRAL.⁶¹ In addition to that, Article 24 (3) of the 2004 US Model BIT gives the claimant the option to choose between the UNCITRAL and ICSID arbitration rules. This article stated that “provided that six months have elapsed since the events giving rise to the claim, a claimant may submit a claim: (a) under the ICSID Convention and the ICSID Rules of Procedure for Arbitration Proceedings, provided that both the respondent and the non-disputing Party are parties to the ICSID Convention; (b) under the ICSID Additional Facility Rules, provided that either the respondent or the non-disputing Party is a party to the ICSID Convention; (c) under the UNCITRAL Arbitration Rules; or (d) if the claimant and respondent agree, to any other arbitration institution or under any other arbitration rules”.⁶² Moreover, the Article 8 of the UK Model BIT also provide the choice between for disputing parties to choose their “(a) the International Centre for the Settlement of Investment Disputes (having regard to the provisions, where applicable, of the Convention on the Settlement of Investment Disputes between States and Nationals of other States, opened for signature at Washington DC on 18 March 1965 and the Additional Facility for the Administration of

⁵⁹ Ibid.

⁶⁰ “NAFTA - Chapter 11 Part 1.” Sice.oas.org. <https://sice.oas.org/trade/nafta/chap-111.asp>.

⁶¹ Horn, N. 2008. “Current Use of the UNCITRAL Arbitration Rules in the Context of Investment Arbitration.” *Arbitration International* 24 (4): 587–602. <https://doi.org/10.1093/arbitration/24.4.587>.

⁶² “TREATY between the GOVERNMENT of the UNITED STATES of AMERICA and the GOVERNMENT of [Country] CONCERNING the ENCOURAGEMENT and RECIPROCAL PROTECTION of INVESTMENT.” <https://ustr.gov/sites/default/files/U.S.%20model%20BIT.pdf>.

Conciliation, Arbitration and Fact-Finding Proceedings); or (b) the Court of Arbitration of the International Chamber of Commerce; or (c) an international arbitrator or ad hoc arbitration tribunal to be appointed by a special agreement or established under the Arbitration Rules of the United Nations Commission on International Trade Law”.⁶³

So we can deduce that some investment treaties provide an option for the parties and investor to choose the applicable arbitration rules, while others state the applicable arbitration rules either the UNCITRAL or ICSID noting that this doesn't rule out the possibility that the host state and foreign investor may agree on an arbitration process outside of ICSID in an individual investment contract since Article 25 (1) of the ICSID Convention requires the assent of both parties to have it applied to the dispute.⁶⁴

Investment protection treaties often specify which laws will apply; however, this is by no means guaranteed in every case. When a treaty specifies which laws apply, it usually says that any disputes must be addressed according to the treaty's terms. Despite the lack of self-reference, the treaty is nonetheless regarded as the primary source of law in investment arbitration because of the unique position it often plays in the process. Therefore, we can deduce that party autonomy has a significant role and is a significant principle in choosing the applicable law in international investment arbitration proceedings. Therefore, we can deduce that in most cases, the laws or rules of law that the parties to a dispute have agreed upon take precedence in determining the law that applies, and courts are considered to be bound by this choice of law.⁶⁵

This principle has been governed by several conventions and rules, including the UNCITRAL, the ICSID, and the ICSID Convention Additional Facility Rules. For example, Article 42 (1) of the ICSID Convention states that “The Tribunal shall decide a dispute in accordance with such rules of law as may be agreed by the parties...”.⁶⁶ Also, Article 54 (1) of the ICSID Convention Additional Facility Rules states that “The Tribunal shall apply the rules of law designated by the parties as applicable to the substance of the dispute...”.⁶⁷ In addition to that, Article 35 (1) of the UNCITRAL Arbitration Rules states that “The arbitral tribunal shall apply the rules of law designated by the parties as applicable to the substance of the dispute...”.⁶⁸ Besides the above, in the same manner, the party autonomy principle was also addressed in the regulations and clauses of the Stockholm Chamber of Commerce (SCC) Arbitration Rules and the International Chamber of Commerce (ICC) Arbitration Rules. Article 27(1) of the SCC Arbitration Rules states that “The Arbitral Tribunal shall decide the merits of the dispute based on the law(s) or rules of law agreed

⁶³ “UK Model BIT (2008) - Electronic Database of Investment Treaties (EDIT).” Edit.wti.org. <https://edit.wti.org/document/show/eafc74b6-7940-4fcd-aa4f-7c8a44984027>.

⁶⁴ “ICSID CONVENTION, REGULATIONS and RULES 1 CONVENTION on the SETTLEMENT of INVESTMENT DISPUTES between STATES and NATIONALS of OTHER STATES.” https://icsid.worldbank.org/sites/default/files/ICSID_Convention_EN.pdf.

⁶⁵ “The Law Applicable in Investment Treaty Arbitration (Chapter 9)”, in *Arbitration Under International Investment Agreements: A Guide to the Key Issues*, Katia Yannaca-Small (ed.), Oxford University Press, 2010

⁶⁶ “ICSID Convention, Regulations And Rules 1 Convention On The Settlement Of Investment Disputes Between States And Nationals Of Other States.” Article 42 (1) https://icsid.worldbank.org/sites/default/files/ICSID_Convention_EN.pdf.

⁶⁷ “ICSID Convention Additional Facility Rules” Article 54 (1) https://icsid.worldbank.org/sites/default/files/ICSID_Addl_English.pdf

⁶⁸ “UNCITRAL Arbitration Rules 2021”, Article 35 (1) https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/21-07996_expedited-arbitration-e-book.pdf

upon by the parties...”⁶⁹ Article 21 (1) of the ICC Arbitration Rules states that “The parties shall be free to agree upon the rules of law to be applied by the arbitral tribunal to the merits of the dispute...”⁷⁰

We can deduce from what has been stated above that if the treaty does not state the applicable law or the law to be applied, then the disputing parties may decide and agree on the applicable law. However, we should note that in some cases the treaties do not include applicable law, and the disputing parties fail to agree on the applicable law. In this case and scenario, the tribunal will need to determine the applicable law through the guidance provided by the arbitration rules applied in investment arbitration disputes.

For example, Article 42 (1) of the ICSID Convention, after stating that the tribunal applies the law chosen and agreed upon by the parties, has further included a scenario and guide for tribunals when there is no agreement between the parties on the applicable law. This article stated that “...In the absence of such agreement, the Tribunal shall apply the law of the Contracting State party to the dispute (including its rules on the conflict of laws) and such rules of international law as may be applicable”.⁷¹ Also, Article 54 (1) of the ICSID Convention Additional Facility Rules, besides giving the parties the right to choose the applicable law and for the tribunal to apply the chosen law, gave an option for the tribunal to determine the applicable law in case the parties fail to reach an agreement. This article has stated clearly that “...Failing such designation by the parties, the Tribunal shall apply (a) the law determined by the conflict of laws rules which it considers applicable and (b) such rules of international law as the Tribunal considers applicable”.⁷² Moreover, Article 35 (1) of the UNCITRAL Arbitration Rules applied the same concept and guidance for tribunals as the ICSID Convention. This article stated in addition to the right given to parties to choose the applicable law that “...Failing such designation by the parties, the arbitral tribunal shall apply the law which it determines to be appropriate”.⁷³ In addition to that, the ICC Arbitration Rules also stated that if such an agreement is failed by the parties, the arbitral tribunal shall apply the appropriate law. So, we can deduce that even these rules and provisions not only gave the parties the possibility to choose and to agree on the applicable law but also gave the tribunal, in case parties failed to agree on the applicable law, the law the tribunal finds suitable and appropriate based on the dispute. However, on the other hand, the SCC arbitration rules gave the parties the freedom to agree on the applicable law; yet, in case parties fail to determine the applicable law, it has stated that tribunals are recommended to have a blend between the rules and laws instead of stating only law as in other Arbitration Rules. Article 21 (1) states that “In the absence of any such agreement, the arbitral tribunal shall apply the rules of law which it determines

⁶⁹ “SCC Arbitration Rules 2023” Article 35 (1) https://sccarbitrationinstitute.se/sites/default/files/2022-12/scc_arbitration_rules_english_2023.pdf

⁷⁰ “ICC Arbitration Rules” Article 21 (1) <https://iccwbo.org/dispute-resolution/dispute-resolution-services/arbitration/rules-procedure/2021-arbitration-rules/>

⁷¹ “ICSID Convention, Regulations And Rules 1 Convention On The Settlement Of Investment Disputes Between States And Nationals Of Other States.” Article 42 (1) https://icsid.worldbank.org/sites/default/files/ICSID_Convention_EN.pdf

⁷² “ICSID Convention Additional Facility Rules” Article 54 (1) https://icsid.worldbank.org/sites/default/files/ICSID_Addl_English.pdf

⁷³ “UNCITRAL Arbitration Rules 2021”, Article 35 (1) https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/21-07996_expedited-arbitration-e-book.pdf

to be appropriate”.⁷⁴ For some legal scholars, such use of the word “Rule of Law” seems to be a freedom given to the tribunal to apply not only the laws but also specific rules related to the disputes.⁷⁵

C. Sources of Law in International Investment Arbitration

We can determine that international investment treaties are the primary source of the applicable law in an investment dispute, accompanied by international laws and host state laws. Therefore, although investment treaties are the primary source, other sources of law should be taken into consideration. In other words, a tribunal may find a satisfactory resolution to a dispute only by applying the treaty's substantive provisions. In most cases, however, other sources of law must be considered and used in addition to the substantive requirements of the treaty to resolve the investment treaty dispute. That said, most investment treaties state and mention that disputes are to be solved per the principles and rules of international law. This international law covers a wide range of sources according to Article 38 (1) of the International Court of Justice Statute which includes “The Court, whose function is to decide in accordance with international law such disputes as are submitted to it, shall apply: (a) international conventions, whether general or particular, establishing rules expressly recognized by the contesting states; (b) international custom, as evidence of a general practice accepted as law; (c) the general principles of law recognized by civilized nations; and (d) subject to the provisions of Article 59, judicial decisions and the teachings of the most highly qualified publicists of the various nations, as subsidiary means for the determination of rules of law”.⁷⁶

In addition to that, it is widely acknowledged that customary international law is heavily influenced by investment treaty arbitration. For example, tribunals often consider the following: the principles of attribution and state responsibility; the consequences of the state of necessity; and the standard of compensation for wrongful expropriation. Similarly, tribunals often refer to broad legal concepts in investment arbitrations, proving their applicability. These principles include the good faith standard, the burden of evidence, and estoppel.⁷⁷

Finally, the use of EU law as substantive law in arbitration procedures involving investment treaties has been the subject of controversy. Since EU legislation is an integral part of every nation's legal system, courts have, in some instances, held that it should be taken into account, analyzed, and implemented where necessary. Nevertheless, a multitude of difficulties in the interpretation of EU law, particularly concerning arbitrations under extra-EU BITs, have been created by later developments, most notably the finding that intra-EU investment arbitrations are

⁷⁴ “ ICC Arbitration Rules” Article 21 (1) <https://iccwbo.org/dispute-resolution/dispute-resolution-services/arbitration/rules-procedure/2021-arbitration-rules/>

⁷⁵ Stefan Riegler, Dalibor Valinčić , and Borna Dejanović, “Applicable Law in Investment Treaty Arbitration.” Globalarbitrationreview.com. <https://globalarbitrationreview.com/guide/the-guide-investment-treaty-protection-and-enforcement/first-edition/article/applicable-law-in-investment-treaty-arbitration>.

⁷⁶ International Court of Justice. 1945. “Statute of the Court of Justice | INTERNATIONAL COURT of JUSTICE.” Wwww.icj-cij.org. 1945. <https://www.icj-cij.org/statute>.

⁷⁷ Stefan Riegler, Dalibor Valinčić , and Borna Dejanović, “Applicable Law in Investment Treaty Arbitration.” Globalarbitrationreview.com. <https://globalarbitrationreview.com/guide/the-guide-investment-treaty-protection-and-enforcement/first-edition/article/applicable-law-in-investment-treaty-arbitration>.

incompatible with EU law. The main reason for these uncertainties is that investment arbitration tribunals are not part of the EU judicial system and cannot ask the Court of Justice of the European Union (CJEU) for preliminary rulings on how EU law should be interpreted. The independence of EU law is questioned by investment arbitration tribunals since they are not supposed to be able to send cases to the CJEU, the highest court in the EU system that decides how EU law should be applied and interpreted.⁷⁸

In sum, revisiting the main research question, how has international investment arbitration evolved from both legal and historical perspectives? And the primary hypothesis that international investment arbitration has evolved significantly over time due to the increasing codification of international investment law, the proliferation of bilateral and multilateral investment treaties, as well as historical and economic shifts in global investment dynamics, we can affirm, based on the historical and legal aspects discussed above, that this hypothesis holds. Through this dynamic navigation of the historical and legal aspects of international investment arbitration, we will be able to have a strong ground to compare it in the coming chapter with inter-state and international commercial arbitration, along with its intersection with new technological tools, including AI tools.

⁷⁸ Stefan Riegler, Dalibor Valinčić , and Borna Dejanović, “Applicable Law in Investment Treaty Arbitration.” Globalarbitrationreview.com. <https://globalarbitrationreview.com/guide/the-guide-investment-treaty-protection-and-enforcement/first-edition/article/applicable-law-in-investment-treaty-arbitration>.

CHAPTER 3

From Merchant Courts to Global Tribunals: The Evolution of International Commercial Arbitration

An alternative to litigation in national courts, international commercial arbitration enables private parties to settle disputes that arise from cross-border business transactions outside the normal litigation courts. In other words, international commercial arbitration is the most common method of dispute resolution that occurs between parties based in different countries.⁷⁹ While inter-state arbitration solves disputes between nations or states and international investment arbitration solves disputes between states and foreign investors, international commercial arbitration, on the other hand, solves disputes between private parties that arise from cross-border commercial transactions.

How has international commercial arbitration evolved from both legal and historical perspectives?

International commercial arbitration has undergone an incredible and complex historical and legal change as an essential instrument for resolving disputes on an international level. This evolution reflects a complicated weave of changes in international commercial dynamics, evolving legal systems, and society's ever-changing views. Therefore, two exclusive aspects, the historical and legal aspects, should be taken into consideration to have a full understanding of the nature of international commercial arbitration and to help us understand its intersection with technology and AI in the coming chapters.

Examining those two aspects will help explain international commercial arbitration's evolving dynamic, creating a strong knowledge base for the understanding of the coming chapters.

I. Historical Aspect

As a crucial tool for international dispute resolution, international commercial arbitration has seen tremendous and complicated historical evolution. This development is the result of a complex web of factors, including shifting social principles, new legal frameworks, and shifting international business dynamics. This section provides a comprehensive overview of international commercial arbitration's history, from its inception to the present day. It delves into important moments in history that have shaped the field's development and modernization.

Legal academics and arbitrators have deftly split the history of international commercial arbitration into three periods or ages, each of which marks a significant turning point in the evolution of this crucial field of dispute resolution. These three distinct ages are the "Age of Aspirations," the "Age of Institutionalization," and the "Age of Autonomy".⁸⁰ We will examine the aforementioned stages one by one and evaluate their respective contributions to the evolution of international commercial arbitration.

⁷⁹ "What Is International Commercial Arbitration?" Law.pepperdine.edu. <https://law.pepperdine.edu/blog/posts/what-is-international-commercial-arbitration.htm>.

⁸⁰ Berkeley, Richard. 2023. "The Three Ages of International Commercial Arbitration." Australian Year Book of International Law 41 (1): 364–73. <https://doi.org/10.1163/26660229-04101011>.

A. The Age of Aspirations

The history of arbitration, including international commercial arbitration, began with the formation of early conflict settlement mechanisms in ancient civilizations known as "The Age of Aspirations".⁸¹ Throughout this historical era, there was a strong desire among societies, groups, people, and merchants to resolve conflicts peacefully.

This historical era encompasses the beginnings of commercial arbitration as a fair and non-violent means of resolving disputes, dating back to pre-modern times and ancient cultures. International commercial arbitration's origins in this age are traced back to the time of the conception of human civilization. Ancient Greece and Europe, ancient cultures recognized the necessity for a systematic mechanism to resolve disagreements, especially during the industrial and trade revolutions. As the volume of trade increased, the disputes between buyers and sellers increased. Arbitration was not only a common procedure in these early cultures, but it was also highly regarded. Different trade associations were established, such as the London Corn Trade Association (LCTA), which was established in 1878, that played an important role in settling disputes by arbitration through the arbitration clauses that were included in the applicable standard contracts used by traders and merchants. Therefore, during that time, Great Britain was considered the main provider of arbitration services.⁸²

The "Age of Aspirations" was distinguished by community-based dispute resolution mechanisms. Disputants looked to their immediate communities for help in resolving disagreements. These early communities actively worked to promote peace and harmony among their members instead of resorting to war. This strategy produced a feeling of intimacy and collective responsibility. Although informal, these early arbitration hearings were yet several treaties and legal development achievements in this regard were presented in the belief of achieving peace and harmony through applicable laws and regulations. The 1794 Jay Treaty between Great Britain and the US is considered a milestone in international arbitration and diplomacy.⁸³ The treaty, named after US Chief Justice and diplomat John Jay, intended to ease tensions between the two nations following the American Revolutionary War and the 1783 Treaty of Paris. A key component of the Jay Treaty was its acceptance of arbitration as a dispute resolution method. The Jay Treaty arbitration proceedings resolved disputed borders, compensation for captured American ships, and war claims. It explained how to choose unbiased arbitrators to hear and settle disputes. The treaty's arbitration clauses stressed arbitration's diplomatic role in amicably resolving international conflicts, contrasting with force or lengthy talks. This convention also showed that arbitration may help governments resolve conflicts, setting a precedent for later international agreements. This historical example created the framework for the subsequent establishment of international

⁸¹ Jérôme Sgard. 2022. "The Three Ages of International Commercial Arbitration, Par Mikaël Schinazi, Cambridge University Press, 2022, 352 Pages." *Revue Critique de Droit International* N° 3 (3): 674–78. <https://doi.org/10.3917/rcdip.223.0674>.

⁸² ICC Dispute Resolution Bulletin, 2020, Issue 2 E-journal of the International Chamber of Commerce (ICC) <https://www.shearman.com/-/media/files/perspectives/2020/08/bull-2020-2-com-schinazi.pdf>

⁸³ Schinazi, Mikaël. "The Age of Aspirations." Part. In *The Three Ages of International Commercial Arbitration*, 29–86. Cambridge Studies in International and Comparative Law. Cambridge: Cambridge University Press, 2021.

arbitration as a favored method of resolving problems between nations, supporting peaceful dispute settlement, and the rule of law in international relations.

In addition to that, another significant development in the history of arbitration goes back to the Alabama Arbitration that took place in the late 19th century. This arbitration, which involved the United States and Great Britain, was based on the so-called "Alabama Claims." These claims concerned the accusation that Great Britain breached its duty of neutrality during the American Civil War; it also served as the foundation for modern international arbitration.⁸⁴ As a result of this dispute and claims, the two countries decided to settle their disagreements through arbitration, establishing a tribunal of five arbitrators consisting of representatives from both parties as well as neutral arbitrators. The Alabama Arbitration was an important step because it demonstrated the two great nations' readiness to settle a complicated international dispute through arbitration rather than through force. We can conclude that during this historical stage, the Alabama Arbitration was a striking illustration of how arbitration could efficiently handle complex international issues, promoting the notion that diplomacy and arbitration were alternatives to military war. Therefore, this has led to significant modernization and recognition of arbitration as the preferred method of dispute resolution.

The Jay Treaty and the Alabama judgment both played a key role in influencing the history and development of arbitration during this historical period. The Jay Treaty established the diplomatic value of arbitration in early international relations, while the Alabama judgment demonstrated the practical effectiveness of arbitration in settling complex international problems. These events all contributed to the development of arbitration as an essential component of modern diplomatic relations and conflict resolution. However, this phase, known as the "Age of Desire," lasted only until the 1920s, when they appeared during the period of the formation of arbitration institutions, i.e., the era known as the "Age of Institutionalization". This is where the "Age of Institutionalization" began.

B. The Age of Institutionalization

The "Age of Institutionalization" at the beginning of the 20th century brought a fundamental change in the way international trade conflicts were settled. During this period, professional arbitration associations were formed, and standardized procedures and norms emerged in response to the increasing complexity of international commercial disputes.

International trade and business experienced a rapid rise starting in the early 1900s, which increased cross-border transactions and, in turn, led to conflicts. It has been discovered that traditional methods of resolving conflicts, such as filing lawsuits in national courts, are unreliable, expensive, and ineffective when it comes to international and commercial conflicts. Arbitration

⁸⁴ Veeder, V V, 'The Historical Keystone to International Arbitration: The Party-Appointed Arbitrator—From Miami to Geneva', in David D. Caron, and others (eds), *Practising Virtue: Inside International Arbitration* (Oxford, 2015; online edn, Oxford Academic, 21 Jan. 2016) <https://doi.org/10.1093/acprof:oso/9780198739807.003.0008>

was initiated when it became clear that a more efficient and objective method of resolving disputes was required.⁸⁵

The creation of legal arbitration organizations during this time was a remarkable development that was essential to the consistency of the arbitration process. Founded in 1919 in Paris, the International Chamber of Commerce (ICC) is acknowledged as one of the world's leading and most innovative institutions devoted to international arbitration. It developed guidelines and practices to deal with disputes that arose in global trade.⁸⁶ In addition, the 1926-founded American Arbitration Association (AAA) rose to prominence as a respected American organization that specialized in both local and international arbitration.⁸⁷

Ensuring uniformity and reliability in arbitration processes and principles was one of the main goals of institutionalization. Examples of organizations that have developed their own rules include the ICC and AAA. These organizations allow parties to include their rules in their arbitration agreements, which offer a conventional and uniform method of resolving disputes. These sets of rules were related to the selection of arbitrators, setting timetables, presenting evidence, and awarding awards. In addition to that, the institutionalization age entailed the establishment and upkeep of qualified arbitrator lists. Parties to a disagreement could pick an arbitrator from a pool of qualified arbitrators with competence in diverse sectors, ensuring that the arbitrator chosen is well-experienced in the matter of the dispute. It should be noted that the arbitration's institutionalization provided various benefits to the parties involved. It had enhanced effectiveness since the arbitration procedure was expedited by institutional regulations, which reduced the time and expense associated with settling disputes. Also, it increased neutrality and expertise since now institutions keep lists of impartial arbitrators with the necessary knowledge to promote fair and informed decision-making. Moreover, especially when comparing institutional arbitration decisions, they provided a beneficial enforceability advantage; institutional arbitration awards were often more easily enforceable across borders.⁸⁸ Finally, it should be noted that the use of institutional arbitration was not limited to any one location. The concepts and institutions of institutional arbitration have spread around the world, contributing to a more consistent approach to the settlement of international business conflicts. As a result, the growing demand for arbitration services in certain areas led to the establishment of other arbitration organizations such as the Singapore International Arbitration Center (SIAC) and the London Court of International Arbitration (LCIA).

In summary, the institutionalization phase at the beginning of the 20th century was a significant turning point in the field of conflict resolution. The establishment of official arbitration institutions,

⁸⁵ Grisel, Florian. "Arbitration as a Dispute Resolution Process: Historical Developments." Chapter. In *Cambridge Compendium of International Commercial and Investment Arbitration*, edited by Stefan Kröll, Andrea K. Bjorklund, and Franco Ferrari, 3–26. Cambridge: Cambridge University Press, 2023. doi:10.1017/9781108304467.002.

⁸⁶ "Our Mission, History and Values." n.d. ICC - International Chamber of Commerce. <https://iccwbo.org/about-icc-2/our-mission-history-and-values/>.

⁸⁷ Schinazi, Mikaël. "The Age of Institutionalization." Part. In *The Three Ages of International Commercial Arbitration*, 87–190. Cambridge Studies in International and Comparative Law. Cambridge: Cambridge University Press, 2021.

⁸⁸ Hayat, Liaqat. 2015. "Institutional Arbitration – the Dawn of Expeditious Justice System - Academike." *Www.lawctopus.com*. January 12, 2015. <https://www.lawctopus.com/academike/institutional-arbitration-expeditious-justice-system/>.

the standardization of procedures and norms, and the accessibility of experienced arbitrators are all major factors in the popularity of arbitration among parties engaged in cross-border and business disputes. Formalizing arbitration and its rules provided a reliable and impartial mechanism for settling disputes, which improved the efficacy of dispute settlement and greatly aided in the expansion of international trade and business.⁸⁹

C. The Age of Autonomy

In modern developments and current arbitration, the "Age of Autonomy" marks a transformational age in the area of conflict settlement. Arbitration in this age has evolved into a self-sustaining and universally recognized procedure for resolving a wide range of conflicts, essentially independent of national legal systems. The acceptance of arbitration as an autonomous and independent mechanism of settling conflicts is one of the distinguishing aspects of the Age of Autonomy. Arbitration in this stage has increasingly been preferred over litigation by parties, who recognize its advantages in terms of flexibility, confidentiality, and neutrality. As a result of that, educational programs began to incorporate specific courses on international and commercial arbitration, teaching new generations of arbitration students and researchers. Moreover, publications on international arbitration developed, eventually covering whole shelves in law libraries. New professional organizations were founded, and even law firms formed their specialist practice units to focus only on international arbitration. This exponential rise impacted not just the market for arbitration but also the market for arbitration.⁹⁰

Moreover, the expansion of international arbitration centers, such as the ICC and the LCIA, has shaped this age. These organizations serve as an attraction for resolving international conflicts because they provide specific rules, skilled arbitrators, and cutting-edge infrastructure.⁹¹ In addition to that, this development in arbitration centers, institutions, and the development of theories about international and commercial arbitration, such as the "lex mercatoria" and the arbitral legal order, has all led to the emergence of new legal schools of thought, such as the French school of international arbitration.⁹² All these new theories, schools of thought, and arbitration institutions have attempted to develop arbitration, whether international or commercial, as an autonomous system of law applied by most countries due to its unique characteristics.

Therefore, we can deduce that arbitration, whether international or commercial, in the "Age of Autonomy" marks a time of substantial expansion and adaptability. It emphasizes arbitration's

⁸⁹ Ryan, Michael. 2002. "Knowledge, Legitimacy, Efficiency and the Institutionalization of Dispute Settlement Procedures at the World Trade Organization and the World Intellectual Property Organization." *Northwestern Journal of International Law & Business* 22. <https://scholarlycommons.law.northwestern.edu/cgi/viewcontent.cgi?article=1554&context=njilb>.

⁹⁰ "The Three Ages of International Commercial Arbitration and the Development of the ICC Arbitration System." n.d. Shearman & Sterling LLP. <https://www.shearman.com/perspectives/2020/08/the-three-ages-of-international-commercial-arbitration-and-the-development-of-the-icc-arbitration>

⁹¹ Schinazi, Mikael. "The Age of Autonomy." Part. In *The Three Ages of International Commercial Arbitration*, 191–280. Cambridge Studies in International and Comparative Law. Cambridge: Cambridge University Press, 2021.

⁹² "The Three Ages of International Commercial Arbitration and the Development of the ICC Arbitration System." n.d. Shearman & Sterling LLP. <https://www.shearman.com/perspectives/2020/08/the-three-ages-of-international-commercial-arbitration-and-the-development-of-the-icc-arbitration>.

growing independence from established legal systems, acceptance of new advancements and demands, and critical role in settling international conflicts. This development has influenced and can reshape arbitration's future, making it more responsive to the needs of a fast-changing global legal world. Yet, it should be noted that all this evolution of arbitration, in all historical ages, has resulted in the recent developments and trends we are seeing today regarding the new technological tools, including AI. But what about the legal aspect and development of international commercial arbitration?

II. Legal Aspect

A. Legal Framework of International Commercial Arbitration

International commercial arbitration, as defined above, is an alternative dispute resolution method used by parties to solve their disputes that arise from the parties' cross-border commercial transactions.⁹³ To resolve their cross-border conflicts, the majority of parties across all sectors choose international commercial arbitration as their method to solve their disputes. The benefits of a neutral forum and a method that can be easily adjusted to provide an award that can be enforced practically anywhere are the advantages of international commercial arbitration that litigation lawsuits do not provide.⁹⁴ In other words, international commercial arbitration has become a popular method for resolving international business disputes due to its efficient and flexible procedures compared to litigation, since parties choose their arbitrators, rules, and laws. Therefore, the legal aspect or framework of international commercial arbitration is based on several local and international legal systems and regulations.

According to some legal scholars, the regulatory framework of commercial arbitration and arbitration, in general, is in the form of a pyramid, as shown in the figure below.⁹⁵

FIGURE 1: INTERNATIONAL ARBITRATION PYRAMIND



⁹³ Bjork, Charles. 2015. "Guides: International Commercial Arbitration Research Guide: Bibliographies," August.

⁹⁴ Klaas, Paul. n.d. "INTERNATIONAL COMMERCIAL ARBITRATION." <https://www.ccarbitrators.org/wp-content/uploads/2021/05/International-Commercial-Arbitration.pdf>.

⁹⁵ Moses, Margaret L. "Introduction to International Commercial Arbitration1." In *The Principles and Practice of International Commercial Arbitration: Third Edition*, 1-19. Cambridge: Cambridge University Press, 2017. doi:10.1017/9781316585245.003.

B. The Pyramid Framework of International Commercial Arbitration

As seen in the above figure, at the base of the pyramid is the arbitration agreement entered into between the parties. This agreement is considered to be the main and basic framework governing the relationship between the parties and the dispute resolution process between the parties according to the pyramid. In other words, the arbitration agreement is considered to be a unique agreement where a new obligation emerges out of it. The parties' signatures indicate their agreement to be bound by these laws as indicated in the agreement. Therefore, arbitration courts are limited to deciding on issues specifically addressed in the contract. Then, after the agreement comes the scope applicable to the disputing parties and the applicable arbitration rules. In other words, the arbitration agreement may modify these standards for a specific case, but they will apply to all arbitrations that adopt them. In many cases, a regulation will be required to include the phrase "unless otherwise agreed in writing by the parties." This rule is not binding but will be used as a default if the parties cannot agree on a specific issue via negotiation. So, unless the institution considers a certain rule to be necessary, the parties' agreement will take precedence over the arbitration rules concerning any given topic.⁹⁶

After the arbitration agreement, the scope and applicable arbitration rules in the pyramid come under the national laws applied. At this stage, the national laws applied include both the arbitration laws of the seat of arbitration and the substantive laws. For this stage of the pyramid, many countries followed and took into account the UNCITRAL Model Law in International Commercial Arbitration. The purpose of the Model Law is not to compete with the existing arbitration rules but rather to supplement them. Consequently, the Model Law contains several articles that function as default provisions. This means that these provisions will be applied "unless the parties have agreed otherwise." Since the arbitration rules reflect the parties' decision on how to conduct arbitration, they show how the parties have "otherwise agreed"—they will typically control if the parties' chosen rules for arbitration provide for a process or rule that differs from the Model Law. When interpreting the arbitration agreement, deciding on the merits of a dispute, or handling any other substantive matter, the national law that the parties have selected will apply. The tribunal will only decide which substantive law applies if the parties fail to determine the applicable laws.

In addition to that, after the applicable national law comes the international arbitration practice. This stage of the pyramid includes the guidelines and practices that have been developed. An example of these guidelines and practices that have been developed by international arbitration institutions, like international arbitration rules developed by the International Bar Association on conflict of interest in international arbitration, or even the code of arbitrator's ethics that has been issued by the American Arbitration Association and the American Bar Association. In addition to that, to help arbitrators and other parties involved in arbitration make informed judgments, the United Nations Commission on International Trade Law (UNCITRAL) has compiled Notes on

⁹⁶ Moses, Margaret L. "Introduction to International Commercial Arbitration1." In *The Principles and Practice of International Commercial Arbitration: Third Edition*, 1-19. Cambridge: Cambridge University Press, 2017. doi:10.1017/9781316585245.003.

Organizing Arbitral Proceedings. While neither the parties nor the tribunal is bound by the Notes, they may help bring arbitration standards closer together.

C. International Conventions Governing Commercial Arbitration

Furthermore, the applicable international arbitration practices come at the top of the pyramid of international arbitration treaties. One of the most important treaties is the New York Convention, also known as the Convention on the Recognition and Enforcement of Foreign Arbitral Awards. Established in 1958, this convention is considered to be one of the key advantages of international commercial arbitration. This convention streamlines award recognition and enforcement across jurisdictions, making the national courts obligated to enforce valid arbitral awards, contributing to the finality and effectiveness of the arbitration process. By relying on the New York Convention, parties to an international commercial arbitration process can implement the results of the arbitration process due to the standardized enforcement through this convention. Moreover, the New York Convention promotes the community by encouraging courts to recognize and enforce foreign arbitral verdicts. Multinational transaction parties are increasingly using arbitration to resolve disputes due to global enforcement. We can conclude that the New York Convention establishes a global framework for acknowledging and executing arbitral rulings, making it crucial to international corporate arbitration. It simplifies enforcement and strengthens arbitration verdicts, making it a crucial instrument for promoting arbitration as a reliable means of resolving international commercial disputes.

It should be noted that, in addition to the New York Convention, other conventions play an important role in international commercial arbitration. For example, the Inter-American Convention on International Commercial Arbitration, also known as the Panama Convention. This convention is also considered to be a significant convention that entered into force in 1976. The main aim of this convention is to regulate the enforcement of arbitral awards among member states and to increase the effectiveness of commercial arbitration by regulating the applicable framework⁹⁷. In other words, the convention provides standardized procedures for the recognition and enforcement of arbitral awards issued in cross-border disputes. We can deduce that both the New York Convention and the Panama Convention serve as complementary legal frameworks aiming to establish standardized legal grounds for the recognition and enforcement of arbitral awards. However, the Panama Convention specifically addresses the recognition and enforcement of arbitral awards within the Americas, while the New York Convention takes a global and wider approach. In other words, the Panama Convention creates a regional framework within the Americas, while the New York Convention provides a wider international framework that covers and includes most of the countries worldwide.

Moreover, in addition to the Panama Convention, there is also the European Convention on International Commercial Arbitration, dated 1961. The initial intention of this convention was for it to be a multilateral agreement that could be used in an East-West context, to standardize the

⁹⁷ LLC, Aceris Law. 2017. "Inter-American Convention on International Commercial Arbitration (the Panama Convention) Aceris Law." ACERIS LAW. January 20, 2017. <https://www.acerislaw.com/inter-american-convention-international-commercial-arbitration-panama-convention/>.

whole arbitration process (except recognition and enforcement). The 1958 New York Convention has already addressed these points. The primary goal of the Convention was to establish a separate body of rules for the resolution of business disputes through arbitration, free from the shackles of Eastern and Western European social and economic systems, as well as national laws and regulations. Since the 1958 New York Convention only covered the acceptance and execution of arbitral rulings, it is evident that the European Convention also sought to complete the regulation of arbitration processes.⁹⁸

Therefore, as we have seen, private agreements, agreed-upon standards, and international practice are all part of the regulatory framework for international commercial arbitration. We can also deduce that national and international regulations enhance and strengthen the arbitration process to ensure it runs fairly and effectively, while parties have extensive liberty to influence the process. When issues arise in cross-border commercial transactions, the regulatory framework reassures the parties that they will have a fair way to resolve them.

In conclusion, revisiting the main research question: how has international commercial arbitration evolved from both legal and historical perspectives? The primary hypothesis is that international commercial arbitration has undergone an incredible and complex historical and legal change as an essential instrument for resolving disputes on an international level. This evolution reflects a complicated weave of changes in international commercial dynamics, evolving legal systems, and society's ever-changing views. We can affirm, based on the historical and legal aspects discussed above, that this hypothesis holds. Through the above chapters, we have provided a quick overview of the historical and legal evolution and development of the three different fields of international arbitration: inter-state arbitration, international investment arbitration, and international commercial arbitration. Through these chapters that provide the needed ground to understand those different fields of arbitration, the reader will be able to dive further into the coming chapters of the dissertation that will provide a comparative analysis of these fields along with their intersection with technology, including artificial intelligence and the possibility of technology to replace arbitrators, while also providing recommendations to improve the current framework.

⁹⁸ “The European Convention on International Commercial Arbitration (1961) (European ICA) - World Arbitration Reporter (WAR) - 2nd Edition | ArbitrationLaw.com.” n.d. Arbitrationlaw.com. Accessed January 27, 2024. <https://arbitrationlaw.com/library/european-convention-international-commercial-arbitration-1961-european-ica-world-arbitration>.

CHAPTER 4

Reimagining Arbitration: The Intersection of Artificial Intelligence and International Arbitration in Inter-State, International Investment, and International Commercial Arbitration

I. Introduction

The concept of incorporating technology into the judicial and legal processes is no longer a distinct idea as it used to be years ago. The impact of the COVID-19 pandemic has increased the demand for speedy ways to solve disputes. The development of new technological tools, especially during the COVID-19 pandemic, has changed the way people live and interact in society as well as in the legal world.⁹⁹ Legal experts and professionals had to reassess their approach to technology and had to accept it into their practice. Disputes are becoming progressively international, complex, and sensitive. Both private and state parties in an arbitration process are heavily relying on technology to solve their dispute in a faster manner. The adoption of simple technological tools in international arbitration, such as emails, digital data management, and online case research, was the beginning of the transformation and the interaction between technology and international arbitration. The rise and increased use of digital technological tools have significantly reshaped the field of international arbitration, transforming it into an Online Dispute Resolution (ODR) field. ODR has broken into international arbitration, but Artificial Intelligence (AI) has also significantly influenced the field by amending and redefining its boundaries. With this spread of ODR and AI into the field of international arbitration, we can imagine the intersection between those technological aspects giving rise to new and innovative forms of how the arbitration tasks and processes are being handled. Some legal experts stated that the arbitration procedures designed with a technological framework are not only innovations, but they represent a logical development in how technology can support the practice of law.¹⁰⁰

The use and integration of AI and technological tools in the legal and Alternative Dispute Resolution (ADR) context is an ongoing process. They are increasingly utilized, especially during the current technological era we are living through, and it is expected to increase and expand even further with the creation and expansion of new technological tools. Yet, critical questions on how to implement these technological tools and the strategies that could be applied to maximize their benefits while addressing their challenges related to AI-generated decisions and the ability to replace human arbitrators. These concerns will be tackled in the coming chapters while taking into consideration that ADR processes are expected to be efficient as well as unbiased, reliable, and transparent since they are legitimate and serve a public function.

AI has significantly impacted various aspects of our lives over the last few years, and its influence in the legal field in general and the international arbitration field in particular is increasingly apparent. AI consists of algorithms that arise from various calculations. Over time, algorithms have evolved not only to depend on already pre-determined input but also to use and utilize data, permitting them to change, adapt, and improve. This evolution is often referred to as “second generation” machines, according to Richard Susskind in his book “Online Courts and the Future

⁹⁹ Maria Mimoso, "Artificial Intelligence in International Commercial and Investment Arbitration," *International Investment Law Journal* 3, no. 2 (July 2023). <https://investmentlaw.adjuris.ro/articole/An3v2/5.%20Maria%20Mimoso.pdf>.

¹⁰⁰ Chatterjee, Payel, Singhania, Aman, Singh Sharma, Yuvraj “Technology and Artificial Intelligence: Reengineering Arbitration in the New World.” <https://www.ibanet.org/technology-and-artificial-intelligence-reengineering-arbitration-in-the-new-world>.

of Justice”.¹⁰¹ Computer experts, in this progressive stage of AI, defined AI as the capability of machines to accomplish tasks, reach required results, predict issues, learn to adjust to new situations, and solve problems without the need to have human oversight.¹⁰²

This chapter will tackle and examine the main question of how the intersection of AI with Inter-State, International Investment, and International Commercial Arbitration influences the development and practice of international dispute resolution, and what the key benefits and drawbacks of this integration are.

The intersection of AI with Inter-State, International Investment, and International Commercial Arbitration provides numerous benefits, such as increased efficiency, cost reduction, and enhanced decision-making through data analysis and predictive tools. However, it also presents drawbacks, including potential biases in AI algorithms, concerns over data privacy and security, and the challenge of maintaining human oversight and ethical standards in the arbitration process. Therefore, in this chapter, we will tackle the current intersection of AI with international arbitration, specifically Inter-State, International Investment, and International Commercial Arbitration, using different examples that highlight and illustrate this intersection, its benefits, and drawbacks. As we navigate this technological era, understanding these aspects will be crucial for the future of international arbitration in general and the Inter-State, International Investment, and International Commercial Arbitration field in particular.

II. Intersection of AI and International Arbitration

In the fast-changing world of cross-border transactions and dispute resolution, incorporating AI into the arbitration processes embodies a major move toward greater efficiency, transparency, and flexibility in this digital era. International Arbitration, as an alternative dispute resolution method outside the traditional courts, has long been recognized as a valuable ADR process known for its flexibility, confidentiality, and expertise in its complex disputes. As AI technologies progress in the ADR field, specifically in Interstate, International Investment, and International Commercial Arbitration, they are altering arbitration practices, representing both opportunities and challenges that require thorough examination. In the past year, the use of AI technologies has significantly increased. For example, ChatGPT, a chatbot and virtual assistant developed by OpenAI, was recently recognized as the fastest-growing AI application in the world of technology.¹⁰³ A judge in Colombia, Judge Juan Manuel Padilla, confirmed that he had used ChatGPT, an OpenAI technology, in his ruling without specifying the extent to which he had relied on it.¹⁰⁴ Judge Juan Manuel Padilla stated that “ChatGPT and other such programs could be useful to 'facilitate the

¹⁰¹ Susskind, Richard, *Online Courts and the Future of Justice* (New York, 2019; online edn, Oxford Academic), <https://doi.org/10.1093/oso/9780198838364.001.0001>

¹⁰² Michael Kearns and Aaron Roth. 2019. *The Ethical Algorithm: The Science of Socially Aware Algorithm Design*. Oxford University Press, Inc., USA.

¹⁰³ Dickson, Ben. 2023. “What Is ChatGPT? A Basic Explainer.” PCMag Middle East.

June 5, 2023. <https://me.pcmag.com/en/ai/17368/what-is-chatgpt-a-basic-explainer>.

¹⁰⁴ “Colombian Judge Uses ChatGPT in Ruling on Child’s Medical Rights Case.” 2023. Cbsnews.com. CBS News. February 2, 2023. <https://www.cbsnews.com/news/colombian-judge-uses-chatgpt-in-ruling-on-childs-medical-rights-case/>.

drafting of texts" but "not with the aim of replacing judges".¹⁰⁵ He added that "by asking questions to the application, we do not stop being judges, thinking beings".¹⁰⁶ This case has resulted in a large debate, which we will tackle in the coming chapter. But the question remains whether the rapid adoption of AI tools like ChatGPT for legal assistance can lead to an increasing presence of AI systems in legal and ADR settings?

In the realm of ADR, from the 1970s, AI tools were used in a rule-based and expert system manner. An example of this is the ADR system using AI developed by RAND Corporation in the 1970s-1980s to strengthen California's product liability settlement.¹⁰⁷ Additionally, even if the landscape of AI is significantly changing, some AI tools that are currently in use have existed for years and have specific frameworks guiding these technologies in the arbitration field. A well-known example is AI-Translation Software. This software has helped to manage a very large number of translated foreign language documents involved in specific legal cases. Section 34 of the Arbitration Act of England 1996 stated that the translation of legal documents involved in a case is a legal matter to be determined by the tribunal.¹⁰⁸ Therefore, it allows the tribunal to decide how this translation of documents is being made. Due to the cost and time of traditional human translation, usually, AI translation is the first step that parties or even tribunals intend to use. Although AI Translation software could be misleading and result in an inaccurate translation of legal terms, human-generated translation could also be misleading and require more time and cost. One of the cases that shows evident consequences of inaccurate translation that led to one of the parties losing the case because of the translation was the case of "Occidental Petroleum v Ecuador".¹⁰⁹ In this case, the issue was related to a mistranslation of key documents involved in the case, but it wasn't related to AI translation software. While AI translation software is increasingly being used in arbitration cases, in this case, the inaccurate translation was not related to the use of AI translation software, but rather to human translations. Moreover, not only are AI translation software and other AI tools that have existed for years in international arbitration, but also another significant AI tool in international arbitration is the AI tool for document review. AI, as a digital computer or computer-controlled robot that performs tasks using intelligence and has learning intelligence capabilities, has played a significant role in document review in the arbitration process.¹¹⁰ With this intelligence, capabilities enable these AI tools to prioritize from the legal documents provided in the case the most relevant and important documents to start with and expedite the review process of these documents, especially in large cases and volumes of documents. This allowed us to replace the expenses and time-consuming traditional document review process with a more efficient process. One of the cases that has highlighted the use of AI

¹⁰⁵ Ibid

¹⁰⁶ Ibid

¹⁰⁷ Ryan Abbott and Brinson S Elliott, 'Putting the Artificial Intelligence in Alternative Dispute Resolution: How AI Rules Will Become ADR Rules' (2023) 4(3) *Amicus Curiae* 685, 686–706.

¹⁰⁸ "Arbitration Act 1996." 2022. Legislation.gov.uk. 2022. <https://www.legislation.gov.uk/ukpga/1996/23/section/34>.

¹⁰⁹ vladmin. 2022. "Case Study: 'Serious Problems of Translation' – Occidental v. Ecuador." Legal Translation Services, London, UK | Vocalegal. September 28, 2022. <https://www.vocalegalglobal.com/occidental-v-ecuador/>.

¹¹⁰ Copeland, B.J. 2022. "Artificial Intelligence." In *Encyclopedia Britannica*. <https://www.britannica.com/technology/artificial-intelligence>.

document review tools was the 2016 case of “Pyrrho Investments Ltd v MWB Property Ltd”.¹¹¹ This case involved the use of AI tools that rely on “predictive coding” and “computer-assisted review” to identify the most relevant documents. This use has marked the first approval and consent for the use of AI tools in courts, specifically the English courts.¹¹²

Although this case was a significant case during that time regarding the use of AI tools for document review, the widespread use of such tools nowadays shows how AI has significantly changed the landscape of the legal field in general and international arbitration specifically, especially with the creation and use of new AI tools in international arbitration. Generative AI tools that create new outcomes based on the data provided are considered an innovation in the legal field and are still largely unregulated.¹¹³ According to a survey conducted in 2023 by FTI Consulting which included the participation of more than 100 lawyers, arbitrators, mediators, and other legal practitioners worldwide showed that only a small number of international arbitration practitioners are using AI tools in their complex tasks, such as drafting legal questions and conducting legal research, since these areas are considered as sensitive areas in the arbitration process.¹¹⁴ Other small numbers of arbitration practitioners reported that their firms are using AI for complex tasks that include AI tools for predicting case outcomes, legal research, and drafting legal questions. Additionally, the survey results showed that about one-third of the respondents who participated in the survey stated that they already have established clear guidelines on the use of AI tools in arbitration, with large firms taking the lead in establishing a framework for the use of AI. In contrast, 23% of the respondents who participated in the survey reported that they do not have clear guidelines on the use of AI in the arbitration process, and 25% reported that they find the current framework clear to rely on.¹¹⁵

While there is a strong urge for the use of AI tools for legal research in the field of international arbitration, it should be addressed and used with caution. This was concluded by two New York lawyers who were sentenced in June 2023 to pay USD 5,000 for relying on fictional case law generated by ChatGPT.¹¹⁶ Although several arbitration law firms are implementing strict policies on the use of AI tools like ChatGPT, centralized frameworks and guidelines from arbitration institutions are needed to regulate and promote a consistent approach in the field of international arbitration. Moreover, according to legal expertise, the use of AI tools in international arbitration that help organize, articulate, and draft arguments is an innovative step.¹¹⁷ Judges in Texas and Pennsylvania have already implemented standards that require parties involved in the dispute to declare if AI has been used in drafting the pleadings, along with a verification of the accuracy of

¹¹¹ “Pyrrho Investments Ltd v MWB Property Ltd & Ors [2016] EWHC 256 (Ch) (16 February 2016).” 2016. Bailii.org. 2016. <https://www.bailii.org/ew/cases/EWHC/Ch/2016/256.html>.

¹¹² Ibid

¹¹³ Clyde. 2024. “AI and Arbitration: The Perspective from England & Wales.” Clydeco.com. Clyde & Co LLP. January 25, 2024. <https://www.clydeco.com/en/insights/2024/01/ai-and-arbitration-the-perspective-from-england-wa>.

¹¹⁴ Audrey. 2023. “Guest Blog: How Will AI Impact Dispute Resolution? - ICC - International Chamber of Commerce.” ICC - International Chamber of Commerce. December 19, 2023. <https://iccwbo.org/news-publications/guests-blog-speeches/guest-blog-how-will-ai-impact-dispute-resolution/>.

¹¹⁵ Ibid

¹¹⁶ Merken, Sara. 2023. “New York Lawyers Sanctioned for Using Fake ChatGPT Cases in Legal Brief.” Reuters, June 26, 2023, sec. Legal. <https://www.reuters.com/legal/new-york-lawyers-sanctioned-using-fake-chatgpt-cases-legal-brief-2023-06-22/>.

¹¹⁷ Clyde. 2024. “AI and Arbitration: The Perspective from England & Wales.” Clydeco.com. Clyde & Co LLP. January 25, 2024. <https://www.clydeco.com/en/insights/2024/01/ai-and-arbitration-the-perspective-from-england-wa>.

the documents.¹¹⁸ Also, Canadian courts have established the same guidelines.¹¹⁹ In the UK, although the applicable guidelines are lacking, arbitrators are issuing orders requiring and requesting that the disclosure of the use of AI be kept clear and proportional to the use of AI in the justice arbitration process.¹²⁰

Arbitration, as a recognized alternative dispute resolution, offers a timely and efficient resolution to the dispute at hand, even in complex cases. Incorporating AI tools into the arbitration process has a proactive approach that resulted in benefits while also taking into consideration and addressing the challenges raised.

For example, in Canada, a robot mediator was used to resolve a three-month-long dispute, demonstrating the growing role of AI tools ADR.¹²¹ Moreover, there have been efforts to replace arbitration secretaries with AI assistance, especially for tasks related to legal research and summarizing legal submissions or evidence. This urged an argument among legal experts that it is difficult for AI to be used in every aspect of arbitration due to the diverse practice areas and laws, which could limit the scope of testing these AI tools. According to some experts, AI tools cannot fully replace the practical understanding and knowledge of experts in arbitration. AI tools are more likely to process information and data through inductive reasoning rather than deductive reasoning.¹²² This all resulted in several questions, such as whether AI tools are suitable for the arbitration process. In what form are AI tools being used?

To answer these questions, it is important to first differentiate between AI applications that are used to support and assist arbitrators and the AI tools that are used to replace arbitrators. Lawmakers must focus on enhancing the efficiency and quality of the arbitration process by unlocking the AI tools that could enhance this process. AI techniques, which are in the form of “machine learning”, rely on the approach where the solution to a dispute at hand is not pre-programmed but relies on the data given. In the legal field, these AI tools, known as “machine learning” tools, rely on “supervised learning methods”. This means that human arbitrators categorize the data based on the required dimensions, and the AI tools will analyze this data to determine the best outcome and result using the provided data. Currently, AI tools are applied in the arbitration process in a way that helps human arbitrators perform the required tasks during the arbitration process. These AI tools primarily serve three key purposes. The first purpose is the AI tools that assist with case management and the arbitration process in general, the second purpose is the tools that support the collection and analysis of the information and data provided, and the third key purpose is the AI tools that aid in decision making by offering predictive models.¹²³

¹¹⁸ “Standing Order - in Re: Artificial Intelligence (‘AI’) in Cases Assigned to Judge Baylson | Eastern District of Pennsylvania | United States District Court.” 2019. <https://www.paed.uscourts.gov/rules-orders/standing-order-re-artificial-intelligence-ai-cases-assigned-judge-baylson>.

¹¹⁹ Clyde. 2024. “AI and Arbitration: The Perspective from England & Wales.” Clydeco.com. Clyde & Co LLP. January 25, 2024. <https://www.clydeco.com/en/insights/2024/01/ai-and-arbitration-the-perspective-from-england-wa#10>.

¹²⁰ Ibid

¹²¹ Hilborne, Nick. 2019. “Robot Mediator Settles First Ever Court Case.” Legal Futures. February 19, 2019. <https://www.legalfutures.co.uk/latest-news/robot-mediator-settles-first-ever-court-case>.

¹²² Zekos, G.I. (2022). AI in Arbitration and Courts. In: Advanced Artificial Intelligence and Robo-Justice . Springer, Cham. https://doi.org/10.1007/978-3-030-98206-5_10

¹²³ Ibid

For case management and the management of the arbitration process in general, existing AI tools are primarily digitalization tools such as platforms for organizing online hearings and other AI tools use machine learning combined with Natural Language Processing (NLP) technology that assist in scheduling and planning the workload. Noting that NLP technology tools not only excel in the scheduling and planning workload but also play a significant role in the arbitration process and legal field in general, since language criteria are involved in the arbitration process. Additionally, the smart scheduling assistant collaborates with humans via email and with machine learning models that capture key details like time, location, and even participants, which help schedule meetings with minimal human interaction and involvement. These AI tools are developed in a way that helps them identify crucial meeting components and the time that aligns with the participant's needs automatically, without human involvement. These AI tools are considered to be valuable since they work as a supportive tool in scheduling and managing case conferences and hearings for complex arbitration cases involving several parties from different jurisdictions. In other words, these tools can prioritize the needs of each case at hand, helping to find a suitable meeting time and coordinate filing deadlines in alignment with the arbitrators and parties involved in the dispute.¹²⁴

Moreover, AI tools application in the arbitration process are increasingly taking place and several forms. These AI applications are also focused on providing arbitrators and even legal counsels with a tool that helps in fact-finding and analysis, including systems for document processing, data identification, and categorizing the data by themes without prior classification. As arbitration becomes more complex, with high levels of documentation, presentations, and even data significantly increasing the workload on arbitrators and their teams, the implementation of such tools has resulted within the process. The technology sector has been integrated into the legal field, creating a “LegalTech” sector. This “LegalTech” sector has offered technological tools and services for the legal field, including the arbitration field, such as e-discovery, online case management, and data storage and processing, which provide significant benefits to the arbitration process by supporting the arbitrator and legal counsels in the management of the process and reducing the risk of human error at various stages of the process. For instance, e-discovery tools rely on machine learning methods to identify relevant and important sections of the provided documents, offering a larger and greater precision than the normal manual review.¹²⁵ Furthermore, these tools not only assist with identifying relevant sections of the documents provided but also employ predictive coding that analyzes the content of the documents, allowing them to categorize additional documents or even use cloud technology to search and examine larger databases.¹²⁶

In addition to that, AI tools and applications designed for decision analysis and prediction of outcomes, which rely on extensive datasets of carefully labeled information, are used in the arbitration process to support arbitrators in their role. Through utilizing such tools that provide predictive data analysis, these tools help improve the quality of judgments and awards, enhancing

¹²⁴ News, Tech. 2019. “Machine Learning Infrastructure at X.ai.” Prosyscom Tech. June 2019. <https://www.prosyscom.tech/artificial-intelligence/machine-learning-infrastructure-at-x-ai/>.

¹²⁵ Zekos, G.I. (2022). AI in Arbitration and Courts. In: Advanced Artificial Intelligence and Robo-Justice . Springer, Cham. https://doi.org/10.1007/978-3-030-98206-5_10

¹²⁶ Ibid

the legitimacy and acceptance of these decisions and awards. It is important to note that predictive AI tools and applications require a large amount of data and an accurate database to perform their tasks properly. In this context, France has enacted legislation that permits increased access to judicial decisions while also at the same time protecting the confidentiality and privacy involved in the decision.¹²⁷ This significant law and legislation was the Loi de Programmation de Justice 2018-2022 (LPJ),¹²⁸ which was passed on 29 March 2019 and came into effect on 1st of January 2020. It tackled the relationship between arbitration and AI, despite some opposition to it from several lawyers and legal practitioners. This law has introduced several key provisions aimed at modernizing the French legal system and aligning the legal services provided with the technological developments taking place. This is achieved by preventing sensitive information from being accessed publicly while also creating a larger pool of data for more accurate legal prediction models.¹²⁹ Through this legislation and law, the French legislator has actively supported the adoption of AI and online dispute resolution, especially in the area of handling repetitive cases. This approach has demonstrated the clear intention of the French legislature and system to regulate the use of technology and AI tools in our current technological era and to prevent any potential misuse of such tools in the legal field.¹³⁰ Additionally, this law has also introduced another important development related to the online arbitration platform certification, through a decree (n°2019-1089)¹³¹ published on 27 October 2019 that outlined the procedures for online arbitration and mediation to obtain certification for one of the approved parties by satisfying specific requirements. One of the specific requirements issued by the LPJ is that these online platforms cannot rely solely on AI to render and issue decisions. In other words, human arbitration should be involved for the certification to be provided. An example of those developments is the online platform, Jus Mundi. This platform is a legal intelligence platform powered by AI technology that provides access to a vast collection of legal resources in several areas, including international arbitration. It has processed all the ICSID decisions in investment arbitration and several other awards into PDFs and searchable documents, along with allowing access to statistics related to arbitrators' reasoning that will help in other cases.¹³²

Moreover, as mentioned above, currently AI is being utilized for various tasks in the arbitration field, including legal research, legal review, contract drafting, managing data and records, drafting pleadings, organizing documents, document discovery, and assisting in language translation and interpretation. AI tools are also being used to review briefs before submission, update research, suggest, and even propose arguments. As a result, AI tools are also being used and integrated into

¹²⁷ “Arbitration, Open Data, Justice and Artificial Intelligence: A New Step Forward - Kluwer Arbitration Blog.” 2020. Kluwer Arbitration Blog. April 16, 2020. <https://arbitrationblog.kluwerarbitration.com/2020/04/16/arbitration-open-data-justice-and-artificial-intelligence-a-new-step-forward/>.

¹²⁸ “LOI N° 2019-222 Du 23 Mars 2019 de Programmation 2018-2022 et de Réforme Pour La Justice (1) - Légifrance.” 2019. Gouv.fr. 2019. <https://www.legifrance.gouv.fr/loda/id/JORFTEXT000038261631>.

¹²⁹ “Arbitration, Open Data, Justice and Artificial Intelligence: A New Step Forward - Kluwer Arbitration Blog.” 2020. Kluwer Arbitration Blog. April 16, 2020. <https://arbitrationblog.kluwerarbitration.com/2020/04/16/arbitration-open-data-justice-and-artificial-intelligence-a-new-step-forward/>.

¹³⁰ Ibid

¹³¹ “Décret N° 2019-1089 Du 25 Octobre 2019 Relatif à La Certification Des Services En Ligne de Conciliation, de Médiation et d'Arbitrage - Légifrance.” 2019. Gouv.fr. 2019. <https://www.legifrance.gouv.fr/loda/id/JORFTEXT000039281664>.

¹³² <https://jusmundi.com>. n.d. “Jus Mundi | Smart Search for International Law and Arbitration.” Jus Mundi. <https://jusmundi.com/en>.

the case management of the arbitration process through scheduling meetings, handling phone calls and inquiries, and generating and sending standard forms of letters to parties. For example, Michigan courts are utilizing a program that allows citizens to resolve certain civil disputes online.¹³³ Similarly, Ohio, New York, and Texas are using online AI platforms that allow citizens to submit their disputes related to real estate, taxes, and traffic tickets. However, although they submit their disputes through online AI platforms, the decisions are made by human judges and arbitrators.¹³⁴ From here, we can realize that AI tools are used to assist arbitrators with the process while leaving the decision-making to human arbitrators instead of the AI tool. However, what are the advantages of such use and integration, and what drawbacks might the use of AI tools present?

III. Benefits and Drawbacks of AI

AI and technology continue to make inroads into various aspects of the legal field, including international arbitration, in particular international commercial, international investment, and inter-state arbitration. Its integration and use in the arbitration field and process have resulted in several benefits as well as drawbacks or challenges that should be explored to have a clear view of the future steps that need to be taken by legal practitioners and legislators to increase the benefits of such tools and reduce the drawbacks that could result from them. In this section, we will explore the benefits and drawbacks that result from the use of AI tools.

A. Benefits

International arbitration is an effective dispute resolution mechanism for cross-border and international disputes. The invasion of AI marks a significant technological innovation in the field.

As AI continues to evolve, it brings numerous benefits and opportunities to enhance the efficiency, accuracy, and overall effectiveness of the arbitration process. AI technologies are being integrated into the dispute resolution mechanism and fundamentally altering how disputes are managed and resolved. AI technologies have the potential to revolutionize international arbitration in several key areas.¹³⁵ Imagine being able to upload all documents into an AI platform or machine and just wait for a few seconds or minutes and receive a complete summary, result, decision, or even an arbitral award. Interesting, right?

Well, this option is not that far away and could be an applicable option. Nearly all of us are already relying on AI and technological tools in our work and daily lives. Whether it is our smartphones, laptops, computers, research engines, or even virtual meeting platforms, and recently ChatGPT. This section aims to deal with and tackle the key benefits AI offers in the international arbitration

¹³³ 2022. Michigan.gov. 2022. <https://www.courts.michigan.gov/>.

¹³⁴ Zekos, G.I. (2022). AI in Arbitration and Courts. In: Advanced Artificial Intelligence and Robo-Justice . Springer, Cham. https://doi.org/10.1007/978-3-030-98206-5_10

¹³⁵ Al Fatayri, Layan. 2024. "AI in International Arbitration: What Is the Big Deal? - American Review of International Arbitration." American Review of International Arbitration - Columbia Law School. October 22, 2024. <https://aria.law.columbia.edu/ai-in-international-arbitration-what-is-the-big-deal/>.

field, highlighting how it has benefited the workflow, management, and the arbitration process in general. From the initial stages of selecting arbitrators, where AI can analyze vast amounts of data to identify the most suitable arbitrators based on their expertise, past rulings, and even potential biases, to the drafting of awards and briefs, AI is playing an increasingly pivotal role.¹³⁶ Automating routine tasks of AI arbitration, such as the use of AI for arbitration selection by the parties, document review, legal research, case analysis, and several other aspects to be discussed, helps legal practitioners and arbitrators save time and resources. Additionally, AI-driven predictive analytics could also potentially offer more reliable assessments of case outcomes, allowing the parties to make a more informed decision. These technological advancements and their integration into the arbitration field are seen by several legal practitioners to have significant benefits and are expected to foster greater transparency, efficiency, innovation, and modernization in arbitration.¹³⁷ The Chartered Institute of Arbitrators Guideline on the Use of AI in Arbitration (2025) (“Ciarb AI Guideline”), launched on 19 March 2025, aims to guide on leveraging AI in a way that enables dispute resolvers, parties, their representatives, and other stakeholders to benefit from its advantages while promoting practical measures to minimize risks to the integrity of the process, safeguard procedural rights, and ensure the enforceability of resulting awards or settlement agreements, also mentioned this benefit for the use of AI. Part I of this guideline tackles the benefits and risks of the use of AI in arbitration; one of the benefits mentioned is the efficiency and quality that AI has. AI has the potential to significantly enhance the efficiency and quality of the arbitration process.¹³⁸

Additionally, according to the post written by Viktoria Simone Fritz, a foreign law intern working with Foreign Law Specialist Jenny Gesley at the Global Legal Research Directorate of the Law Library of Congress, titled “Artificial ‘Judges’? – Thoughts on AI in Arbitration Law” stated that research, staff, and arbitration practitioners of the Library of Congress frequently conduct extensive online research and use digital tools. Many jurisdictions, like Germany, Austria, Liechtenstein, the European Union, and even the United States, offer online platforms and databases for legal documents and court decisions. However, in arbitration, due to its high confidentiality characteristic, such resources for the arbitration field are less common. Yet, due to the tendency towards greater transparency, efficiency, innovation, and modernization in arbitration in general, and in investor-state arbitration in specific, AI tools are used and available to help gather relevant legal information and materials.¹³⁹

The pandemic that the legal field faced has prompted the field to re-evaluate its connection with technology and to incorporate these technological tools into everyday practices.¹⁴⁰ This shift and

¹³⁶ Ibid

¹³⁷ Sahota, Neil. 2024. “AI in International Arbitration: Reforming Justice.” Neil Sahota. February 12, 2024. <https://www.neilsahota.com/ai-in-international-arbitration-reforming-justice/>.

¹³⁸ “Ciarb | Launch: Ciarb Guideline on the Use of AI in Arbitration (2025).” 2025. Ciarb.org. 2025. <https://www.ciarb.org/news-listing/launch-ciarb-guideline-on-the-use-of-ai-in-arbitration-2025/>.

¹³⁹ Gesley, Jenny. 2021. “Artificial ‘Judges’? – Thoughts on AI in Arbitration Law | in Custodia Legis.” The Library of Congress. January 13, 2021. <https://blogs.loc.gov/law/2021/01/artificial-judges-thoughts-on-ai-in-arbitration-law/>.

¹⁴⁰ Designs, Ex Nihilo. 2023. “Artificial Intelligence and Arbitration: A Perfect Fit? L’intelligence Artificielle et l’Arbitrage : Un Mariage Parfait?” ADR Institute of Canada. March 2, 2023. <https://adric.ca/artificial-intelligence-and-arbitration-a-perfect-fit/>.

the integration of new technological tools raise the main questions that need to be addressed. Is AI and International Arbitration a perfect fit? Is AI the Key to Modernizing International Arbitration?

According to a recent study conducted by Goldman Sachs, AI could automate 25% of work-related tasks, noting that this percentage increases to 44% in the legal field, highlighting the significant change in the legal field.¹⁴¹ That's why, according to some legal practitioners, AI has transformed from being a new ordinary tool to becoming a powerful, beneficial technological tool in the arbitration field.¹⁴²

On October 19, 2023, the ICC Young Arbitration & ADR Forum conducted a workshop in Zurich, Switzerland titled "Navigating the Frontiers of Artificial Intelligence in Arbitration".¹⁴³ This workshop aimed to identify and highlight the key areas in which AI has a substantial impact on international arbitration and the arbitration process by highlighting both the benefits and the drawbacks. In this section, we will tackle the benefits of AI. The workshop started with exploring the role of AI in 3 key areas of the arbitration process: document review, fact-finding, and document production, in addition to several aspects of the arbitration process related to the selection of arbitrators, e-discovery process, and decision-making.

According to this workshop, AI tools that perform electronic document review are now widely used in the arbitration process, providing greater efficiency compared to the traditional manual methods, especially when dealing with large volumes of data and documentation. It should be noted that before the review of such documentation, data will need to be collected and processed by these AI tools, including the conversion of these documents into readable versions and removing any duplicates. This review process can be completed in several ways, including the traditional manual review, technology-assisted review, or even generative AI-enabled review. According to the article written by one of the associates at CMS, AI can definitely and effectively review and categorize large amounts of documents and information, which enables the rapid identification of essential details relevant to the parties involved in the dispute, saving both time and cost in the review stage of the arbitration process.¹⁴⁴ Moreover, according to the workshop, the role of AI tools goes beyond the review of documents. These AI tools are currently being used to find facts, identify relevant documents, redact sensitive information and data, and even sort out privileged or confidential information. AI can enhance data analysis and research by processing vast amounts of information quickly, offering insights that would take human arbitrators much longer to uncover. In international arbitration, AI tools can analyze legal precedents, case laws, and arbitration awards from various jurisdictions to identify relevant patterns and provide

¹⁴¹ "The Potentially Large Effects of Artificial Intelligence on Economic Growth (Briggs/Kodnani)." 2023. Gspublishing.com. 2023. <https://www.gspublishing.com/content/research/en/reports/2023/03/27/d64e052b-0f6e-45d7-967b-d7be35fabd16.html>.

¹⁴² "Navigating the Main Impacts of Artificial Intelligence in International Arbitration: Insights from the ICC YAAF Workshop - Kluwer Arbitration Blog." 2024. Kluwer Arbitration Blog. March 17, 2024. <https://arbitrationblog.kluwerarbitration.com/2024/03/17/navigating-the-main-impacts-of-artificial-intelligence-in-international-arbitration-insights-from-the-icc-yaaf-workshop/>.

¹⁴³ "Young Arbitration and ADR Forum (YAAF) - ICC - International Chamber of Commerce." 2024. ICC - International Chamber of Commerce. July 24, 2024. <https://iccwbo.org/dispute-resolution/professional-development/yaaf-programme/>.

¹⁴⁴ "Artificial Intelligence in Arbitration: Use, Challenges and Limitations." 2024. Cms.law. CMS Law.Tax. 2024. <https://cms.law/en/gbr/publication/cms-international-disputes-digest-2024-summer-edition/artificial-intelligence-in-arbitration-use-challenges-and-limitations>.

predictive analytics, aiding lawyers and arbitrators in making more informed decisions.¹⁴⁵ This was also stated by other legal practitioners who have tackled AI in both international commercial and international investment arbitration, who have also mentioned that AI plays a crucial role in data analysis since it can process very large amounts of data, whether related to commercial or investment disputes. This includes the analysis of contracts, arbitration regulations, laws, and even other documents. Doing so and using such tools will help arbitrators in recognizing patterns and trends that may aid in their decision-making, leading to an effective process and fair outcome.¹⁴⁶ Part I of the Ciarb AI Guideline, which tackles the benefits of the use of AI in arbitration, has also confirmed that AI tools in international arbitration offer transformative capabilities across various domains, including case analysis, data analysis, text generation, and evidence collection. They can predict potential case outcomes and provide insights into procedural strategies, enhancing efficiency and predictability. Through text mining and analysis, AI facilitates the detection of conflicting statements, enabling objective identification of patterns, correlations, and disparities in complex datasets. Moreover, AI assists in systemizing, structuring, and summarizing texts, ensuring clarity, grammatical accuracy, and coherence. Additionally, AI streamlines the evidence-collection process, making it more efficient and consistent.¹⁴⁷

Moreover, according to the CMS article, AI can also support and assist arbitrators in not only document review but also testimonies by analyzing and organizing the content of the testimonies received in a faster, structured, and efficient manner.¹⁴⁸ These AI tools will allow arbitrators and legal practitioners to deal with the dispute at hand, to identify relevant information and case preparation, and enhance their ability to focus on other aspects of the dispute.

Furthermore, in terms of case management, AI tools have been seen as tools that support arbitrators in managing proceedings more effectively by automating tasks such as scheduling hearings and sending reminders of deadlines. AI can support virtual hearings by managing scheduling and enhancing the efficiency of remote proceedings.¹⁴⁹ The automation of such tasks to AI tools ensures smoother handling of cases and reduces the risk of human errors, enhances the management of the case, reduces the time spent by arbitrators on these matters, and improves the overall effectiveness of the process, allowing arbitrators and legal practitioners to spend more time and focus on substantive legal matters. This was also stated by other legal practitioners who have tackled AI in both international commercial and international investment arbitration. They have also mentioned that when it comes to administrative tasks, automating them with AI tools can

¹⁴⁵ Al Fatayri, Layan. 2024. "AI in International Arbitration: What Is the Big Deal? - American Review of International Arbitration." American Review of International Arbitration - Columbia Law School. October 22, 2024. <https://aria.law.columbia.edu/ai-in-international-arbitration-what-is-the-big-deal/>.

¹⁴⁶ Maria Mimoso, "Artificial Intelligence in International Commercial and Investment Arbitration," *International Investment Law Journal* 3, no. 2 (July 2023). <https://investmentlaw.adjuris.ro/articole/An3v2/5.%20Maria%20Mimoso.pdf>.

¹⁴⁷ "Ciarb | Launch: Ciarb Guideline on the Use of AI in Arbitration (2025)." 2025. Ciarb.org. 2025. <https://www.ciarb.org/news-listing/launch-ciarb-guideline-on-the-use-of-ai-in-arbitration-2025/>.

¹⁴⁸ Ibid

¹⁴⁹ Al Fatayri, Layan. 2024. "AI in International Arbitration: What Is the Big Deal? - American Review of International Arbitration." American Review of International Arbitration - Columbia Law School. October 22, 2024. <https://aria.law.columbia.edu/ai-in-international-arbitration-what-is-the-big-deal/>.

reduce tedium, streamlining the complex work of the arbitration process to the focus of the arbitrators.¹⁵⁰

We can deduce that AI tools used in the arbitration process have a broad range of applications in the arbitration process and the legal field. Another significant benefit and advantage of the integration of AI within the arbitration process is its potential to reduce bias in the selection of arbitrators and increase the diversity of arbitrators, which is considered a key area of interest in the arbitration field.¹⁵¹ Using AI tools to choose suitable arbitrators based on their expertise, past rulings, and even potential biases from diverse databases will minimize the biases that might affect the decision-making and the arbitration process in general. Currently, some online platforms and databases use data analytics and are working to have transparency in the arbitration selection process. One notable example is Catherine Rogers' Arbitrator Intelligence Questionnaire (AIQ).¹⁵² This questionnaire compiles biographical details and statistics, including case management and decision-making practices about international arbitrators, which aims to provide reports for legal counsels and parties involved in an arbitration process, promoting diversity by offering more information about the arbitrators and reducing bias in the selection process.¹⁵³ This innovation was a potential solution to the lack of diversity in international arbitration, as several previous surveys showed and confirmed, such as the 2015 Queen Mary Survey on the Improvements and Innovations in International Arbitration, which identified that the third worst characteristic of international arbitration was the lack of insights into arbitrators' efficiency and expertise.¹⁵⁴ According to Rogers, with the AIQ, having access to detailed information and reports about arbitrators allows fair comparison between arbitrators and allows users to choose and select arbitrators through a transparent process. Moreover, and similarly, the GAR's arbitrator Research Tools¹⁵⁵ also provides insights and raw data about arbitrators. This allows users to filter their criteria and select a suitable arbitrator for the current arbitration process. Therefore, integrating AI enhances the data analytics capabilities to suggest the best candidate arbitrators based on the parties' needs and preferences, saving time and cost, and potentially leading to quicker resolutions.¹⁵⁶

Furthermore, AI benefits were seen in that they can streamline document review and the e-discovery process, which are often time-consuming aspects of international arbitration. Through NLP and machine learning algorithms, AI can efficiently sift through large volumes of documents to identify relevant information, reducing the time, costs, and errors associated with manual

¹⁵⁰ Maria Mimoso, "Artificial Intelligence in International Commercial and Investment Arbitration," *International Investment Law Journal* 3, no. 2 (July 2023). <https://investmentlaw.adjuris.ro/articole/An3v2/5.%20Maria%20Mimoso.pdf>.

¹⁵¹ "AI Arbitrator Selection Tools and Diversity on Arbitral Panels." Wwv.ibanet.org. <https://www.ibanet.org/article/97cb79fa-39e9-48c1-8cb0-45569e2e62af>.

¹⁵² Catherine A. Rogers, "We Need Your Input! On the Arbitrator Intelligence Questionnaire - Kluwer Arbitration Blog." 2017. Kluwer Arbitration Blog. February 22, 2017. <https://arbitrationblog.kluwerarbitration.com/2017/02/22/we-need-your-input-on-the-arbitrator-intelligence-questionnaire/>.

¹⁵³ Ibid

¹⁵⁴ "2015 Improvements and Innovations in International Arbitration - School of International Arbitration." 2015. Qmul.ac.uk. 2015. <https://www.qmul.ac.uk/arbitration/research/2015/index.html>.

¹⁵⁵ Morris, Emily. 2022. "Law Business Research." Law Business Research. August 30, 2022. <https://www.lbresearch.com/lbr-launches-global-arbitration-reviews-gar-primary-sources/>.

¹⁵⁶ Gesley, Jenny. 2021. "Artificial 'Judges'? - Thoughts on AI in Arbitration Law | in Custodia Legis." The Library of Congress. January 13, 2021. <https://blogs.loc.gov/law/2021/01/artificial-judges-thoughts-on-ai-in-arbitration-law/>.

review.¹⁵⁷ This was also confirmed by Part I of the Ciarb AI Guideline, which also mentioned that the benefit of AI in the legal research aspect has confirmed that AI-powered research tools are better than traditional search engines because they can adapt and improve over time. They are not only easy to use, thanks to advanced NLP that makes searches more effective, but they can also predict what users are looking for based on their questions.¹⁵⁸

To gain a deeper understanding of how AI is currently being used and its potential benefits, I conducted interviews with experienced arbitrators from various jurisdictions and backgrounds who are active in these fields. This approach ensures that the insights gathered contribute to the existing literature and provide practical perspectives on the evolving role of AI in arbitration, based on real-world experiences in the field. One of the key questions explored was: What are the primary benefits of incorporating AI into arbitration procedures? Many useful responses were collected:

*Mihaela Apostol*¹⁵⁹ stated, “The main benefit is efficiency. AI accelerates processes like document review, research, and drafting, which reduces the overall time and cost of arbitration. It also enhances accuracy by minimizing human error, particularly in data-intensive tasks. Another key advantage is accessibility—AI enables smaller parties, boutique law firms, or resource-constrained jurisdictions to engage in arbitration effectively by automating processes that would otherwise require significant manpower” (Interview, January 03, 2025).¹⁶⁰

*Sarah Reynolds*¹⁶¹ stated, “I think it increases efficiency. Anytime you can eliminate tasks from the arbitrator’s perspective, such as reducing the time spent on procedural history—which is time-consuming to write since it requires referencing several documents—it allows arbitrators to focus more on other tasks, such as drafting awards. It is important to enable arbitrators to concentrate on the higher-end issues of arbitration” (Interview, January 10, 2025).¹⁶²

*Dragana Nikolić*¹⁶³ stated, “I believe this can help streamline certain procedures, such as document management, due diligence in tribunal selection, and the generation of transcripts, thereby reducing the time and cost associated with manual review” (Interview, January 19, 2025).¹⁶⁴

¹⁵⁷ Al Fatayri, Layan. 2024. “AI in International Arbitration: What Is the Big Deal? - American Review of International Arbitration.” American Review of International Arbitration - Columbia Law School. October 22, 2024. <https://aria.law.columbia.edu/ai-in-international-arbitration-what-is-the-big-deal/>.

¹⁵⁸ “Ciarb | Launch: Ciarb Guideline on the Use of AI in Arbitration (2025).” 2025. Ciarb.org. 2025. <https://www.ciarb.org/news-listing/launch-ciarb-guideline-on-the-use-of-ai-in-arbitration-2025/>.

¹⁵⁹ Mihaela Apostol is an independent counsel and arbitrator based in London. Mihaela is a civil and common law qualified lawyer with ten years of experience in international arbitration having worked as counsel, tribunal secretary and arbitrator. She is an Avocat of the Bar of Bucharest, Romania and a Solicitor of the Supreme Court of England and Wales.

¹⁶⁰ Mihaela Apostol, Interview by Layan Al Fatayri, Virtual, January 03, 2025.

¹⁶¹ Sarah Reynolds is an independent arbitrator based in the United States. She is cross licensed in the US, U.K. and Ireland. Sarah focuses on cross-border and domestic commercial disputes and is a former partner in the international arbitration practice of Mayer Brown LLP.

¹⁶² Sarah Reynolds, Interview by Layan Al Fatayri, Virtual, January 10, 2025.

¹⁶³ Dragana Nikolić is an independent attorney-at-law admitted to the bar in Serbia, cooperating with Queritius as Counsel. She specializes in international commercial and investor-state arbitration, managing complex cross-border cases before leading arbitration institutions, and serves as the regional representative for Young ICCA in Europe. Additionally, Dragana holds a bachelor’s degree from the University of Belgrade Faculty of Law and master’s degrees in international law from the University of Cambridge and the University of Belgrade.

¹⁶⁴ Dragana Nikolić, Interview by Layan Al Fatayri, Virtual, January 19, 2025.

*Raymond (Rony) Joseph Araygi*¹⁶⁵ stated, “The incorporation of AI into international arbitration procedures offers several key benefits:

- Enhanced Legal Research: AI enables efficient cross-border research, providing access to legal texts, precedents, and scholarly articles across multiple jurisdictions.
- Minimization of Human Error: AI reduces the likelihood of errors in legal research and document review, particularly when dealing with different judicial systems and complex legal frameworks.
- Improved Translation Accuracy: Based on my experience, AI-powered translation tools offer greater accuracy than conventional applications and online services, which is particularly valuable in multilingual arbitration cases.
- Facilitating Cross-Border Arbitration: AI-powered tools streamline procedural aspects of international arbitration, bridging language barriers, enhancing legal research, and ensuring more efficient case management, ultimately making arbitration more accessible and cost-effective for parties across different jurisdictions” (Interview, February 14, 2025).¹⁶⁶

AI plays a significant role in assisting arbitration parties with tasks like reviewing and producing documents in e-discovery, analyzing data, identifying patterns, and summarizing legislation and case laws. Several existing AI tools, such as Lex Machina, Arbilex, Arbitrator Research Tool (ART), Lit-gate, and Arbitrator Intelligence, have incorporated AI into legal research and e-discovery. This technology allows parties to choose arbitrators, counsel, or experts, helping them identify the best panel or expert for their specific legal issues. AI has been used for some time in the e-discovery process to streamline document review and production.¹⁶⁷

In this regard, I have asked the arbitrators interviewed if they “observed any specific AI tools or applications that have enhanced or hindered efficiency in these cases?”

According to *Mihaela Apostol*¹⁶⁸ “So far, the majority of AI tools revolved around e-discovery, particularly in document-heavy cases (ex., Relativity). On the other hand, efficiency can sometimes be hindered when tools generate false positives or miss context-sensitive nuances, requiring significant human oversight” (Interview, January 03, 2025).¹⁶⁹

¹⁶⁵ Raymond (Rony) Joseph ARAYGI holds a Lebanese Master’s in Law and a Diploma of Higher Studies (DES) in private law from Saint Joseph University—Beirut. Admitted to the Beirut Bar in 1989, Rony is the Managing Partner of ARAYGI & MAALOUY LAW FIRM, established in 1998. Since then, he has been involved in numerous commercial, corporate, fiscal, taxation, and criminal matters. Rony has also participated in international and local arbitrations, both ad hoc and institutional, including under the Rules of the ICC International Court of Arbitration, the Dubai International Arbitration Center (DIAC), and the Lebanese Arbitration and Mediation Center (LAMC), handling a variety of matters such as post-M&A, distribution, construction, joint ventures, and intellectual property. Rony served as Lebanon’s Minister of Culture from February 2014 to December 2016 and received the French civilian distinction of “Commandeur des Arts et des Lettres” in 2016.

¹⁶⁶ Raymond (Rony) Joseph ARAYGI, Interview by Layan Al Fatayri, Virtual, February 14, 2025.

¹⁶⁷ Designs, Ex Nihilo. 2023. “Artificial Intelligence and Arbitration: A Perfect Fit? L’intelligence Artificielle et l’Arbitrage : Un Mariage Parfait?” ADR Institute of Canada. March 2, 2023. <https://adric.ca/artificial-intelligence-and-arbitration-a-perfect-fit/>.

¹⁶⁸ Mihaela Apostol is an independent counsel and arbitrator based in London. Mihaela is a civil and common law qualified lawyer with ten years of experience in international arbitration having worked as counsel, tribunal secretary and arbitrator. She is an Avocat of the Bar of Bucharest, Romania and a Solicitor of the Supreme Court of England and Wales.

¹⁶⁹ Mihaela Apostol, Interview by Layan Al Fatayri, Virtual, January 03, 2025.

According to *Sarah Reynolds*¹⁷⁰ “I really like using Clearbrief, all American Arbitration Association (AAA) tools, Jus Mundi, and Lexis, but I am sure there are many other tools out there that could be very beneficial” (Interview, January 10, 2025).¹⁷¹

On the other hand, *Dragana Nikolić*¹⁷² mentioned that “I have not used any specific AI tools or applications designed exclusively for arbitration practitioners and lawyers. However, I have utilized standard arbitration-related databases that recently incorporated AI-powered functions. I have also used a GPT-4-based AI chatbot, primarily for non-billable work” (Interview, January 19, 2025).¹⁷³

Additionally, *Raymond (Rony) Joseph Araygi*¹⁷⁴ mentioned that “My primary experience with AI in arbitration comes from using ChatGPT and its integrated applications and services. While these tools assist with legal research, drafting, and summarization, I do not have direct experience with specialized AI tools tailored specifically for arbitration. As a result, I am unable to provide detailed insights into specific AI applications that may have significantly enhanced or hindered efficiency in arbitration proceedings” (Interview, February 14, 2025).¹⁷⁵

Additionally, it should be mentioned that international disputes, including international commercial, international investment, and inter-state disputes, often involve parties from diverse cultural and linguistic backgrounds, which could cause communication challenges. The challenges could be reduced and addressed through the use of AI tools that automate the translation of documents and help with speech recognition, which can identify speakers and their languages.¹⁷⁶ This was also confirmed in Part I of the Ciarb AI Guideline as one of the benefits that AI has provided as a result of its use in the arbitration field. This part mentioned that AI tools hold the potential to facilitate translation and interpretation in legal proceedings by translating documents and providing real-time translation of statements, including witness examinations. They can also

¹⁷⁰ Sarah Reynolds is an independent arbitrator based in the United States. She is cross licensed in the US, U.K. and Ireland. Sarah focuses on cross-border and domestic commercial disputes and is a former partner in the international arbitration practice of Mayer Brown LLP.

¹⁷¹ Sarah Reynolds, Interview by Layan Al Fatayri, Virtual, January 10, 2025.

¹⁷² Dragana Nikolić is an independent attorney-at-law admitted to the bar in Serbia, cooperating with Queritius as Counsel. She specializes in international commercial and investor-state arbitration, managing complex cross-border cases before leading arbitration institutions, and serves as the regional representative for Young ICCA in Europe. Additionally, Dragana holds a bachelor's degree from the University of Belgrade Faculty of Law and master's degrees in international law from the University of Cambridge and the University of Belgrade.

¹⁷³ Dragana Nikolić, Interview by Layan Al Fatayri, Virtual, January 19, 2025.

¹⁷⁴ Raymond (Rony) Joseph ARAYGI holds a Lebanese Master's in Law and a Diploma of Higher Studies (DES) in private law from Saint Joseph University—Beirut. Admitted to the Beirut Bar in 1989, Rony is the Managing Partner of ARAYGI & MAALOUY LAW FIRM, established in 1998. Since then, he has been involved in numerous commercial, corporate, fiscal, taxation, and criminal matters. Rony has also participated in international and local arbitrations, both ad hoc and institutional, including under the Rules of the ICC International Court of Arbitration, the Dubai International Arbitration Center (DIAC), and the Lebanese Arbitration and Mediation Center (LAMC), handling a variety of matters such as post-M&A, distribution, construction, joint ventures, and intellectual property. Rony served as Lebanon's Minister of Culture from February 2014 to December 2016 and received the French civilian distinction of "Commandeur des Arts et des Lettres" in 2016.

¹⁷⁵ Raymond (Rony) Joseph ARAYGI, Interview by Layan Al Fatayri, Virtual, February 14, 2025.

¹⁷⁶ Maria Mimoso, "Artificial Intelligence in International Commercial and Investment Arbitration," *International Investment Law Journal* 3, no. 2 (July 2023). <https://investmentlaw.adjuris.ro/articole/An3v2/5.%20Maria%20Mimoso.pdf>.

contribute to harmonizing the interpretation of documents and statements in multilingual contexts, ensuring consistency across different languages used in the proceedings.¹⁷⁷

Lastly, AI also has implications for decision-making in international arbitration. Decision-making lies at the core of every arbitral dispute, and recent developments suggest that AI may increasingly assist arbitrators during this crucial phase of the arbitral process. A notable contemporary example is the American Arbitration Association's (AAA) AI Arbitrator, which reflects a carefully designed human-in-the-loop model of AI-assisted adjudication. Under this framework, the parties first submit their claims, evidence, and legal arguments, after which the AI generates structured summaries of the dispute. Importantly, the parties are given the opportunity to review and validate whether those summaries accurately reflect their submissions. The AI then proceeds to identify key legal and factual issues, analyze the parties' arguments, and generate a proposed draft award. However, the final decision is not rendered by the AI itself. Instead, an AAA-trained human arbitrator reviews the AI-generated analysis and draft award, revises them where necessary, and ultimately signs and issues the final binding award. In this respect, the AAA model does not replace the arbitrator, but rather augments the arbitrator's analytical and drafting capacity while preserving human judgment at the center of the decision-making process. The significance of this model lies not only in its potential to increase efficiency, speed, and consistency, but also in the procedural safeguards built into its design, including party validation, human review, and limited application to two-party, documents-only disputes. These features suggest that AI can be used to modernize arbitration in a way that supports procedural fairness and institutional legitimacy, rather than undermining them.¹⁷⁸

Comparable developments in domestic judicial systems further illustrate the growing role of AI in legal decision-support. For example, the Regional Court of Frankfurt evaluated the FraUKe (Frankfurter Urteils-Konfigurator Elektronisch) tool to assist in mass proceedings involving air passenger rights claims. Similarly, the High Court of Stuttgart adopted OLGA (Oberlandesgerichtsassistent) to classify appeal submissions and generate structured draft decisions in mass cases arising from the diesel emissions scandal. These examples demonstrate that AI is increasingly being used to support adjudicative reasoning and procedural efficiency. At the same time, they also underscore an important common principle across both courts and arbitration: AI may assist in analysis, organization, and drafting, but human decision-makers continue to bear the ultimate responsibility for the legitimacy, fairness, and legal validity of the final outcome.¹⁷⁹

Returning to the initial questions posed in this section, "Is AI and International Arbitration a perfect fit? Is AI the key to modernizing International Arbitration?"—I believe there is a strong argument that AI can indeed serve as both a fitting connection and a key aspect in the modernization of

¹⁷⁷ "Ciarb | Launch: Ciarb Guideline on the Use of AI in Arbitration (2025)." 2025. Ciarb.org. 2025. <https://www.ciarb.org/news-listing/launch-ciarb-guideline-on-the-use-of-ai-in-arbitration-2025/>.

¹⁷⁸ American Arbitration Association, "Your Questions Answered About the AAA AI Arbitrator," October 13, 2025, <https://www.adr.org/news-and-insights/ai-arbitrator-faq/>.

¹⁷⁹ "Navigating the Main Impacts of Artificial Intelligence in International Arbitration: Insights from the ICC YAAF Workshop - Kluwer Arbitration Blog." 2024. Kluwer Arbitration Blog. March 17, 2024. <https://arbitrationblog.kluwerarbitration.com/2024/03/17/navigating-the-main-impacts-of-artificial-intelligence-in-international-arbitration-insights-from-the-icc-yaaf-workshop/>.

international arbitration. However, while the benefits of AI, such as enhanced efficiency, predictive capabilities, and streamlined case management, are evident, many legal experts emphasize that AI's drawbacks and limitations must also be carefully evaluated to fully understand its role in the future of arbitration.

Achieving continuous integration between AI and international arbitration requires not only leveraging its benefits but also addressing potential challenges to have the best outcome of such powerful technologies. Therefore, what drawbacks has AI resulted in?

B. Drawbacks

While the benefits of AI in international arbitration are evident, several challenges and concerns must also be addressed to ensure the responsible and effective use of such tools. In other words, although AI brings several promising and beneficial ways to use these tools in the arbitration process and international arbitration field in general, it comes with some drawbacks, challenges, and limitations that we need to address and avoid overlooking to get the best out of the use of AI and make it a perfect fit for international arbitration.

According to some legal experts, AI can sometimes provide incorrect answers to the extent of faking and providing completely incorrect footnotes, sources, and even case names. They described this as “AI hallucinations,” which can be triggered for several reasons.¹⁸⁰ These “AI hallucinations” can be triggered due to the inaccurate information and data AI has access to. The Ciarb AI Guideline has defined Hallucinations as “Hallucination (AI context) refers to an invented and fictitious piece of information generated by an AI Tool and presented by that AI Tool as factually correct”.¹⁸¹ Sometimes, the data that the AI has access to can be incomplete; for example, certain documents might be confidential, unavailable, or even overlooked or not approved to be shared with the AI tool due to their confidentiality. This incomplete and selective data or information, whether intentionally or not, will lead to inaccurate results and outcomes generated by the AI tools used. An example of when the AI's model results become disconnected from the source and result in incorrect outcomes, which are referenced as “AI hallucinations,” occurred in 2023 when two New York lawyers were held liable for submitting a brief that included the citation of case laws that do not exist, which were generated by ChatGPT.¹⁸² As a response to that, several courts, including the Canadian and U.S. courts, have recommended that legal practitioners and parties declare if any AI was used and involved in the drafting of any brief.¹⁸³ Moreover, on the other hand, having more data and information does not necessarily mean that this will lead to

¹⁸⁰ “Artificial Intelligence in Arbitration: Evidentiary Issues and Prospects.” Globalarbitrationreview.com. <https://globalarbitrationreview.com/guide/the-guide-evidence-in-international-arbitration/2nd-edition/article/artificial-intelligence-in-arbitration-evidentiary-issues-and-prospects>.

¹⁸¹ “Ciarb | Launch: Ciarb Guideline on the Use of AI in Arbitration (2025).” 2025. Ciarb.org. 2025. <https://www.ciarb.org/news-listing/launch-ciarb-guideline-on-the-use-of-ai-in-arbitration-2025/>.

¹⁸² Friedman, Elliot, Marta García Bel, Veronika Timofeeva, and Desmond Chong. “Generative AI: Opportunities and Risks in Arbitration.” English (United Kingdom). <https://www.freshfields.com/en-gb/our-thinking/campaigns/international-arbitration-in-2024/generative-ai-opportunities-and-risks-in-arbitration/>.

¹⁸³ Ibid

improving the performance of the AI tools. While it is commonly believed that a larger database would improve and enhance the accuracy of an AI tool, these data, particularly due to their poor quality, inaccuracy, and inconsistency, can sometimes lead to noise and create additional challenges for the AI tool's results.¹⁸⁴ In this regard, I would like to highlight a criticism of AI tools made by practitioners. According to Cecilia Carrara, in *The Impact of Cognitive Science and Artificial Intelligence on Arbitral Proceedings – Ethical Issues*, in *Austrian Yearbook on International Arbitration* 2020, at 522 & 527, while AI can streamline human tasks, increasing efficiency and reducing costs, the algorithms used in these tools are not far from being flawless. Incomplete or selectively programmed data, whether by design or even oversight, can result in biased or unreliable outcomes and results. The Ciarb AI Guideline has also raised it as one of the risks of the use of AI in arbitration. Additionally, AI tools require substantial information, often involving sensitive and personal data, which must be collected, processed, and even stored, potentially raising privacy and data protection issues in certain countries. Noting that even properly designed AI tools may be used inefficiently and in unintended ways.¹⁸⁵

Moreover, as mentioned earlier, AI relies on vast amounts of data to perform effectively. The AI applications assume that all documents required, disclosed, relevant to, and on record in the arbitration have been uploaded to the AI platform. This could raise concerns for many clients regarding confidentiality and data protection, especially questioning who will have access to this data and the purpose behind it. This risk or drawback was also raised in Part I of the Ciarb AI Guideline. It stated that the use of third-party AI tools in arbitration poses significant confidentiality risks, as maintaining confidentiality is a fundamental requirement in this field. Inputting sensitive data into AI platforms raises concerns about data storage, protection against unauthorized access, use for machine learning, and potential disclosure to third parties. The complexity of real-world AI applications, which often involve multiple tools and platforms, can make it challenging to track how and where data is used or stored. It is crucial to assess the context in which the data is provided and ensure proper permissions are in place for its use beyond dispute resolution. Employing confidentiality agreements and gaining a thorough understanding of how these tools safeguard against misuse or cyber threats is essential. Additionally, AI tools must be carefully vetted for their privacy and security standards, with attention to whether they operate on an open or closed model, as not all tools offer the same level of protection.¹⁸⁶

An incident that highlighted these confidentiality concerns was when a Samsung developer was attempting to fix a bug; he uploaded confidential code to ChatGPT on two occasions. Due to ChatGPT's practice of using input data to refine its responses, this code later appeared in replies to other users from different organizations.¹⁸⁷ Yet, this does not imply that all AI tools operate the same. Some AI tools and platforms operate differently. For example, Harvey, which is a generative

¹⁸⁴ Michael Ansaldo, 2022. "When training AI models, is a bigger dataset better?" <https://web.archive.org/web/20221205153947/https://www.hpe.com/us/en/insights/contributors/michael-ansaldo.html>.

¹⁸⁵ Gesley, Jenny. 2021. "Artificial 'Judges'? – Thoughts on AI in Arbitration Law | in Custodia Legis." The Library of Congress. January 13, 2021. <https://blogs.loc.gov/law/2021/01/artificial-judges-thoughts-on-ai-in-arbitration-law/>.

¹⁸⁶ "Ciarb | Launch: Ciarb Guideline on the Use of AI in Arbitration (2025)." 2025. Ciarb.org. 2025. <https://www.ciarb.org/news-listing/launch-ciarb-guideline-on-the-use-of-ai-in-arbitration-2025/>.

¹⁸⁷ Maddison, Lewis. 2023. "Samsung Workers Made a Major Error by Using ChatGPT." TechRadar. April 4, 2023. <https://www.techradar.com/news/samsung-workers-leaked-company-secrets-by-using-chatgpt>.

AI company, uses a closed system that secures user-submitted information, preventing it from appearing in any future responses for different organizations and users.¹⁸⁸ Furthermore, beyond the risk of accidental disclosure by AI tools, the storage of a very large number of documents, information, and even data on one platform in one place highlights another concern, which is cyberattacks. Do you remember when the Zoom platform faced an issue with data privacy, security measures, and hacking at the beginning of the COVID-19 pandemic?¹⁸⁹ This was one of the cases that highlights the instances where there have been hacking attempts. There have already been instances where arbitration cases faced hacking attempts and highlighted the confidentiality concerns of the use of AI tools. For example, in 2015, during an ongoing arbitration case between China and the Philippines regarding territorial disputes in the South China Sea, hackers used malware to gain access to the Permanent Court of Arbitration's website.¹⁹⁰ Data integrity and security were also some of the risks or drawbacks that the Ciarb AI Guideline has highlighted. According to the guideline, cybersecurity is a critical issue, especially as the shift away from traditional hard-copy submissions coincides with increasingly advanced hacking, phishing schemes, and other cyber threats. It added that participants in arbitration must remain aware of and proactive in addressing the heightened cybersecurity risks associated with the use of AI by both parties in the proceedings and third-party platforms.

Moreover, if AI is capable not only of assisting parties, but also of distorting the evidentiary process, how can its use be detected, challenged, and ultimately proven in arbitration?

To answer this question, it is first necessary to consider the general principle of the burden of proof in arbitration. The principle of burden of proof is central to any dispute resolution process, as it determines which party is responsible for proving the facts on which its claim or defence is based. As a general rule, the burden lies on the party making the allegation. In other words, a party that asserts a particular fact must prove it. This principle applies regardless of whether the party is a claimant or a respondent, as each party bears the burden of proving the factual assertions on which it relies.¹⁹¹ But how can this principle be applied in cases involving the use of AI?

In my opinion, when this principle is applied to the use of AI in arbitration, it means that a party alleging that AI has been used improperly or that AI-generated material has affected the evidentiary record must establish that claim with sufficient evidence. However, this creates significant practical difficulty. The use of AI is often not visible, may not be disclosed, and may be embedded within internal processes, digital tools, or proprietary systems. As a result, proving

¹⁸⁸ "Artificial Intelligence in Arbitration: Evidentiary Issues and Prospects." 2023. Globalarbitrationreview.com. 2023. <https://globalarbitrationreview.com/guide/the-guide-evidence-in-international-arbitration/2nd-edition/article/artificial-intelligence-in-arbitration-evidentiary-issues-and-prospects#footnote-027>.

¹⁸⁹ "Shareholders Sue Zoom over Privacy, Hacking Concerns - Law360." 2020. Law360.com. 2020. <https://www.law360.com/articles/1261581/shareholders-sue-zoom-over-privacy-hacking-concerns>.

¹⁹⁰ <http://arbitrationblog.practicallaw.com/author/practical-law-arbitration>. 2019. "Addressing Emerging Cyber Risks: Reflections on the ICCA Cybersecurity Protocol for International Arbitration." Arbitration Blog. May 17, 2019. <http://arbitrationblog.practicallaw.com/addressing-emerging-cyber-risks-reflections-on-the-icca-cybersecurity-protocol-for-international-arbitration/>.

¹⁹¹ Frédéric G Sourgens, Kabir Duggal and Ian Alexander Laird, 'Burden of Proof in Investor-State Arbitration' in Evidence in International Investment Arbitration (Kluwer Law International 2018) pp. 23 - 56.

whether AI was used and how it influenced the proceedings or the evidence, can be particularly challenging.

Importantly, the difficulty of accessing evidence does not automatically shift the burden of proof to the other party. Even where relevant information is in the control of the opposing party, the burden remains with the party making the allegation. In such cases, a party may need to rely on methods of proof, including circumstantial evidence.¹⁹²

These challenges become even more significant where AI is not only used in the background of proceedings but is alleged to have affected the evidence itself. AI tools may generate inaccurate summaries, fabricated content, or misleading materials, raising concerns about the reliability and integrity of the evidentiary record. In such situations, the issue is not only proving that AI was used, but also demonstrating that its use had a material impact on the evidence or the outcome of the proceedings. Accordingly, while the traditional rules on burden of proof remain applicable, the increasing use of AI introduces new evidentiary challenges. It also places greater responsibility on arbitrators to carefully assess the authenticity, reliability, and origin of the evidence before them, particularly where there are indications that AI tools may have been involved.

To build on the outcomes mentioned above and incorporate evidence from real-world arbitration experiences, I asked arbitrators during the interviews conducted with them, “What challenges or risks do you see associated with AI in arbitration?” I have received several valuable insights:

According to *Mihaela Apostol*¹⁹³ “The primary challenge is ensuring the accuracy and reliability of AI outputs. AI tools rely heavily on the quality of the data they're trained on, which might not always reflect the diversity or complexity of arbitration cases. There's also the risk of over-reliance on AI, which can lead to critical human judgment being overlooked. Another concern is interoperability—integrating various tools across different jurisdictions and legal systems is complex and can slow down adoption.

Moreover, AI’s “black-box” nature can be a problem. It’s not always clear how decisions or insights are derived, which can undermine trust and make it harder to justify outcomes to clients or tribunals” (Interview, January 03, 2025).¹⁹⁴

According to *Sarah Reynolds*¹⁹⁵ “I do see that there are risks. Some of the risks related to AI tools are that they are not always perfect; they sometimes 'hallucinate'. There are also issues with bias. Although I believe AI tools will become increasingly reliable, there will always be risks associated with their use. I do not believe arbitrators should be afraid of using AI tools, but we should be responsible and understand the limitations of these tools.

¹⁹² Ibid

¹⁹³ Mihaela Apostol is an independent counsel and arbitrator based in London. Mihaela is a civil and common law qualified lawyer with ten years of experience in international arbitration having worked as counsel, tribunal secretary and arbitrator. She is an Avocat of the Bar of Bucharest, Romania and a Solicitor of the Supreme Court of England and Wales.

¹⁹⁴ Mihaela Apostol, Interview by Layan Al Fatayri, Virtual, January 03, 2025.

¹⁹⁵ Sarah Reynolds is an independent arbitrator based in the United States. She is cross licensed in the US, U.K. and Ireland. Sarah focuses on cross-border and domestic commercial disputes and is a former partner in the international arbitration practice of Mayer Brown LLP.

With respect to parties, there are risks related to AI generating false evidence, which places more responsibility on arbitrators to ensure they are using and engaging with appropriate AI tools responsibly when reviewing evidence.

As for arbitrators, they are being paid for their judgments, and if they delegate their judgments to AI without disclosure, it raises a disclosure issue or risk. Additionally, another major issue is confidentiality. While the arbitration community is increasingly accepting the use of AI tools within the arbitration process, the mixing of data between cases or exposing data when using open-source AI tools like ChatGPT must be carefully considered. It is essential to ensure that the AI tools used comply with applicable rules and do not violate confidentiality orders. Public disclosure is one of the key risks that arise” (Interview, January 10, 2025).¹⁹⁶

According to *Dragana Nikolić*,¹⁹⁷ “Since international arbitration cases are often confidential, the use of AI for research and analytics is more limited compared to its application in litigation. Additionally, using AI for these purposes may pose challenges due to limited access to the sources used by AI, making it difficult to assess their credibility and completeness” (Interview, January 19, 2025).¹⁹⁸

Moreover, according to *Raymond (Rony) Joseph Araygi*¹⁹⁹ “While AI offers significant benefits in international arbitration, its integration also presents several challenges and risks that must be carefully managed:

- The Most Important risk is the Over-Reliance on AI. Indeed, excessive dependence on AI-generated insights without human validation may lead to misinterpretation or flawed legal reasoning.
- Bias in AI Algorithms: AI models may inherit biases from their training data, potentially leading to unfair or skewed case outcomes.
- Confidentiality Risks: The use of AI in arbitration involves processing sensitive case data, raising concerns about data security, privacy, and compliance with confidentiality obligations.
- Legal & Ethical Uncertainty: The absence of standardized AI regulations in arbitration creates uncertainty regarding its permissible scope, ethical implications, and potential liabilities.
- Potential Efficiency Drawbacks:

¹⁹⁶ Sarah Reynolds, Interview by Layan Al Fatayri, Virtual, January 10, 2025.

¹⁹⁷ Dragana Nikolić is an independent attorney-at-law admitted to the bar in Serbia, cooperating with Queritius as Counsel. She specializes in international commercial and investor-state arbitration, managing complex cross-border cases before leading arbitration institutions, and serves as the regional representative for Young ICCA in Europe. Additionally, Dragana holds a bachelor’s degree from the University of Belgrade Faculty of Law and master’s degrees in international law from the University of Cambridge and the University of Belgrade.

¹⁹⁸ Dragana Nikolić, Interview by Layan Al Fatayri, Virtual, January 19, 2025.

¹⁹⁹ Raymond (Rony) Joseph ARAYGI holds a Lebanese Master’s in Law and a Diploma of Higher Studies (DES) in private law from Saint Joseph University—Beirut. Admitted to the Beirut Bar in 1989, Rony is the Managing Partner of ARAYGI & MAALOUY LAW FIRM, established in 1998. Since then, he has been involved in numerous commercial, corporate, fiscal, taxation, and criminal matters. Rony has also participated in international and local arbitrations, both ad hoc and institutional, including under the Rules of the ICC International Court of Arbitration, the Dubai International Arbitration Center (DIAC), and the Lebanese Arbitration and Mediation Center (LAMC), handling a variety of matters such as post-M&A, distribution, construction, joint ventures, and intellectual property. Rony served as Lebanon’s Minister of Culture from February 2014 to December 2016 and received the French civilian distinction of “Commandeur des Arts et des Lettres” in 2016.

- Accuracy and Bias Concerns: AI tools may produce unreliable or biased results, particularly when trained on incomplete or unrepresentative datasets, potentially impacting legal analysis.
- Transparency Challenges: In some matters, difficulties may occur in understanding the reasoning behind their conclusions. This opacity can raise concerns about procedural fairness, accountability, and trust in AI-assisted arbitration.
- Lack of Source Attribution: AI-generated outputs often fail to provide clear references to the legal texts, precedents, or scholarly materials they rely on. This lack of verifiable sources can undermine the credibility and reliability of AI-assisted legal research in arbitration” (Interview, February 14, 2025).²⁰⁰

Furthermore, aside from the confidentiality concerns, there is another important question: Is it appropriate or even ethical for legal decisions to be made by AI algorithms?

The challenge of incorporating AI tools into decision-making in arbitration is an important aspect that should be taken into consideration. AI could have a significant influence on legal decision-making in international arbitration. While several practitioners state that AI is here to stay, some challenges come from AI that should be taken into consideration. AI depends on statistical data, which implies that it cannot apply the legal reasoning that human arbitrators provide. Instead of judgments based on reasonableness, AI tool decisions reflect statistical probabilities, calculating the outcome and result. Therefore, to answer the question raised above, it is important to tackle the technicalities of AI and its impact on the decision-making aspect of international arbitration. AI, defined as the capacity of a machine to imitate human intelligence, is critically assessed here regarding its capabilities to predict court outcomes, taking into account the issues of data confidentiality, repeated fact patterns, policy shifts, and concerns of bias and data integrity.

Moreover, a fundamental issue with AI in arbitration lies in its inability to genuinely exercise empathy, which is a core component of arbitral decision-making. Arbitration is not merely a technical or rule-based process, but rather a fundamentally human function that requires both judgment and empathy to resolve disputes effectively. Empathy, in this context, goes beyond the mere recognition of emotions and instead involves the ability to imaginatively place oneself in the position of the parties, understanding their perspectives, motivations, and experiences. While advances in artificial intelligence have enabled systems to detect and even mimic emotional responses through tools such as facial and speech recognition, these capabilities remain fundamentally superficial.²⁰¹ AI systems do not possess an internal emotional framework and therefore cannot truly understand or internalize the human dimensions of a dispute. Instead, they operate by identifying patterns and assigning statistical value to emotional cues, without engaging in genuine perspective-taking. This distinction is critical, because arbitral decision-making often requires more than logical consistency; it requires the ability to contextualize facts, weigh competing narratives, and ensure that each party feels heard and understood. Moreover, human

²⁰⁰ Raymond (Rony) Joseph ARAYGI, Interview by Layan Al Fatayri, Virtual, February 14, 2025.

²⁰¹ Cole Dorsey, HYPOTHETICAL AI ARBITRATORS: A DEFICIENCY IN EMPATHY AND INTUITIVE DECISION-MAKING, 13 Arb. L. Rev. (2021).

decision-making itself is not purely rational but is shaped by a combination of deliberative reasoning and intuitive, often emotion-informed processes. These intuitive elements, including empathy, can help arbitrators navigate complex factual and relational dynamics that cannot be fully captured by algorithmic models. In contrast, AI decision-making remains primarily deliberative and rule-based, lacking the intuitive dimension that underpins human judgment. As a result, even if AI can approximate certain aspects of reasoning, its inability to genuinely empathize raises serious concerns about the fairness, legitimacy, and acceptance of its decisions in arbitration.

Machine Learning AI models, which focus on enabling computer systems to enhance performance through experience and by learning from previous errors and mistakes, require large amounts of data or information to enhance the outcome results. A study conducted in 2016 that focused on textual data taken from judgments examined the European Court of Human Rights rulings to explore predictive insights from legal texts. Assuming that the text's ability to predict court decision outcomes is consistent with other empirical studies on complex judicial cases and aligns with core legal ideas, the legal practitioners of this study stated that their findings based on this study could pave the way for anticipating future decisions in the European Court of Human Rights cases.²⁰²

Yet, it should be taken into consideration that the core data-driven initiatives are based on the "Four Vs of Big Data" concept. The "Four Vs of Big Data" concept refers to volume, Variety, Velocity, and Veracity, which provide a framework to evaluate the AI algorithm tools in the legal field. In other words, these Four Vs highlight the limitations of AI-based tools in decision-making. Starting with the first V, which refers to "Volume". Volume of data is considered essential, especially since machine learning algorithms require substantial data to produce accurate results. According to experts, it is believed that AI is more effective when a large volume of data on similar topics is provided²⁰³. Moreover, another key concern is whether AI tools used for decision-making can process and handle a unique variety of cases. For example, legal experts believe that in international commercial arbitration, the adoption of such AI tools is less compared to international investment arbitration due to its varied and specific cases.²⁰⁴ Therefore, the second V, which refers to variety, is also essential for such AI models to be able to issue accurate outcomes tackling the variety of cases.

Additionally, regarding the fourth V, which refers to Veracity, in the context of AI, it pertains to the accuracy and trustworthiness of data. While AI models are often seen as error-free and benefit from algorithmic neutrality, they are still vulnerable to biases introduced by non-objective, human-driven influences. If the training data reflects human biases, this "data diet" vulnerability can lead to systemic flaws, causing the model to develop biases and make erroneous predictions.²⁰⁵

²⁰² VIA Mediation Centre. 2016. "AI and International Arbitration: Technical, Ethical, and Legal Implications | via Mediation Centre." Viamediationcentre.org. 2016. <https://viamediationcentre.org/readnews/MTc0MQ==/AI-and-International-Arbitration-Technical-Ethical-and-Legal-Implications>.

²⁰³ "What Is Big Data? | Big Data and AI." 2024. Cloudflare.com. 2024. <https://www.cloudflare.com/learning/ai/big-data/>.

²⁰⁴ VIA Mediation Centre. 2016. "AI and International Arbitration: Technical, Ethical, and Legal Implications | via Mediation Centre." Viamediationcentre.org. 2016. <https://viamediationcentre.org/readnews/MTc0MQ==/AI-and-International-Arbitration-Technical-Ethical-and-Legal-Implications>.

²⁰⁵ Ibid

Bias in AI poses a significant challenge, undermining its validity and reliability. AI's ability to mirror or elaborate on human bias can result in decisions and even results that are discriminatory. As Princeton University computer scientist Arvind Narayanan stated, "Today's AI/ML [machine learning] is uninterpretable, biased, and fragile. When it works, we don't understand why." This concern is pressing in the legal field, where AI tools' role in areas such as e-discovery and arbitrator selection could lead to biased and incorrect outcomes. Moreover, the lack of explainability and even transparency of the AI tools used within the arbitration process intensifies the issue, making it even harder to detect these inherited biases in these algorithms. Additionally, the nature of AI tools in the international arbitration field compromises the credibility of evidence generated by these systems. When AI tools that deal with the decision-making process lack transparency, accuracy, and reliability of the results, it makes the total process difficult. It was noted by James Dempsey, of the Berkeley Center for Law and Technology, that "AI may replicate human error or bias or introduce new types of error or bias AI trained on data that reflects biases that infected past decisions could incorporate those biases into future decision-making yet give such decisions the appearance of objectivity".²⁰⁶ Moreover, this also raises an issue related to the enforceability of arbitral awards.

Furthermore, to support the above, an example needs to be made of how bias and lack of transparency in AI could impact the outcome and results in the legal field in general and arbitration in particular. For example, the AI tools used in e-discovery analyze a large volume of information and data to identify the relevant evidence to the case at hand. If these AI tools and algorithms are trained on biased data and information, this will develop results that are biased and exclude the critical evidence required, and might include non-relevant data, which will lead to unfair outcomes that do not align with the characteristics of international arbitration. Another example is the AI bias in the arbitrator selection process. AI is increasingly being used to select and recommend arbitrators who have relevant experience to the dispute at hand based on the arbitrator's past decisions or expertise. Yet, hidden bias in such AI tools and algorithms may result in a selection pool that lacks diversity or even inclusivity and can even result in recommending an arbitrator that is not well-suited to the dispute.²⁰⁷

Moreover, if AI increasingly mediates decision-making and arbitration processes more broadly, can it still be maintained that parties are truly heard?

This question lies at the heart of contemporary concerns surrounding the procedural implications of AI in international arbitration. While AI systems are frequently justified on grounds of efficiency, speed, and cost reduction, their integration into arbitral practice may come at the expense of a more fundamental procedural guarantee: the assurance that each party's case is not merely presented, but genuinely understood, considered, and heard. Although the benefits of technological innovation are undeniable, their adoption must not come at the expense of core procedural safeguards, most notably the right to be heard as reflected in Article 18 of the

²⁰⁶ AI. 2023. "ArbTech." ArbTech. May 12, 2023. <https://www.arbtech.io/blog/exploring-the-challenges-of-bias-and-lack-of-transparency-in-ai-implications-for-the-legal-industry>.

²⁰⁷ Ibid

UNCITRAL Model Law and comparable legal frameworks.²⁰⁸ In this respect, the right to be heard presupposes more than formal participation; it requires meaningful engagement with the substance, nuance, and context of the parties' submissions. Yet where AI tools are employed to summaries pleadings, filter evidence, organize case materials, or otherwise shape the manner in which information is received and processed, there is a heightened risk that complex arguments are reduced, contextual subtleties are overlooked, and the human dimension of a dispute is translated into simplified algorithmic outputs. This concern becomes even more significant where AI-assisted advocacy affects the balance between parties: if one party has superior access to advanced AI tools, or is better positioned to deploy them strategically, the resulting imbalance may undermine equality and the fairness of the proceedings.²⁰⁹ Equally troubling is the possibility that AI-generated inaccuracies, hallucinations, or fabricated content may distort the tribunal's understanding of the issues, thereby weakening a party's effective opportunity to present its case in a meaningful way. Conversely, if tribunals become increasingly sceptical of AI-assisted submissions, there is a corresponding danger that legitimate arguments may be discounted or undervalued simply because they are perceived as technologically mediated. In this way, AI does not merely risk changing how arbitration is conducted; it may also alter the conditions under which parties are actually heard. Consequently, the growing use of AI in arbitration may not only affect the mechanics of adjudication but may also erode the procedural legitimacy upon which arbitral justice ultimately depends.

Moreover, when I asked Arbitrators in the interview conducted with them, "Are there any ethical or procedural concerns introduced by AI, particularly regarding data privacy, bias, or transparency in decision-making?" I have received several valuable insights:

*Mihaela Apostol*²¹⁰ stated, "Yes, these are significant concerns. AI tools process vast amounts of sensitive information, and any data breach can have serious repercussions for client confidentiality. Bias is another issue—if the training data is skewed, AI might perpetuate or even exacerbate systemic inequalities. Transparency is a big procedural concern; many AI systems operate as "black boxes," making it difficult to explain or challenge how specific results were produced. Addressing these issues requires robust governance frameworks, clear protocols, and ethical oversight to ensure fair and secure use of AI" (Interview, January 03, 2025).²¹¹

*Sarah Reynolds*²¹² stated, "I think I have the same answer as my previous answer. If open-source AI tools are being used, they may save time but could lead to unintentional disclosure. If arbitrators are using open-source AI tools like ChatGPT to generate an award, they have an obligation to

²⁰⁸ Sanjida Sohana and Yash Jain, 'Invisible Voices and New Evidentiary Minefield: AI, Deepfakes and Right to be Heard in International Arbitration' (Young ICCA, 15 October 2025) <https://www.youngicca.org/voices/invisible-voices-and-new-evidentiary-minefield-ai-deepfakes-and-right-be-heard-international> accessed 29 March 2026.

²⁰⁹ Ibid.

²¹⁰ Mihaela Apostol is an independent counsel and arbitrator based in London. Mihaela is a civil and common law qualified lawyer with ten years of experience in international arbitration having worked as counsel, tribunal secretary and arbitrator. She is an Avocat of the Bar of Bucharest, Romania and a Solicitor of the Supreme Court of England and Wales.

²¹¹ Mihaela Apostol, Interview by Layan Al Fatayri, Virtual, January 03, 2025.

²¹² Sarah Reynolds is an independent arbitrator based in the United States. She is cross licensed in the US, U.K. and Ireland. Sarah focuses on cross-border and domestic commercial disputes and is a former partner in the international arbitration practice of Mayer Brown LLP.

disclose this to the parties. Of course, this will impact the billing process, as they should not bill for time they did not actually spend.

Additionally, if arbitrators are allowing the use of AI to generate decisions, I do not think that is proper at all. I have concerns, particularly regarding jurisdictions that only enforce awards that are reasoned. There is a real question about whether awards generated by AI can be considered reasoned awards.

That said, I do see room in the market for AI-based decision-making where parties do not want to pay for human recognition or a lengthy process, they just need a quick answer. I can see AI tools being developed for this purpose, but of course, parties would need to accept the terms. However, even with these tools, for the time being, I have concerns about the enforceability of AI-generated awards.

This was part of what the Silicon Valley Arbitration & Mediation Center was trying to address in issuing the guidelines. The aim was to figure out if AI tools could reach a level of sophistication where they could actually decide disputes, and what steps would need to be taken in various jurisdictions to ensure those awards are enforceable.

Lastly, I believe this should always be based on the parties' choice, and no arbitrator should make such a decision on behalf of the parties” (Interview, January 10, 2025).²¹³

*Dragana Nikolić*²¹⁴ stated, “Yes, especially because the AI field is still highly unregulated. In particular, I understand that the information used during the AI training may raise significant concerns related to data privacy and bias, which could ultimately lead to incorrect or unfair decisions. Also, it may be unclear what criteria are used when conducting research, analysis, or making decisions by AI, which raises significant concerns about transparency” (Interview, January 19, 2025).²¹⁵

Moreover, *Raymond (Rony) Joseph Araygi*²¹⁶ mentioned that “Yes, AI introduces several ethical and procedural concerns in arbitration, including:

- Data Privacy: AI processes sensitive arbitration data, raising cybersecurity risks.
- Bias & Fairness: AI may reinforce biases, leading to unfair decisions.

²¹³ Sarah Reynolds, Interview by Layan Al Fatayri, Virtual, January 10, 2025.

²¹⁴ Dragana Nikolić is an independent attorney-at-law admitted to the bar in Serbia, cooperating with Queritius as Counsel. She specializes in international commercial and investor-state arbitration, managing complex cross-border cases before leading arbitration institutions, and serves as the regional representative for Young ICCA in Europe. Additionally, Dragana holds a bachelor's degree from the University of Belgrade Faculty of Law and master's degrees in international law from the University of Cambridge and the University of Belgrade.

²¹⁵ Dragana Nikolić, Interview by Layan Al Fatayri, Virtual, January 19, 2025.

²¹⁶ Raymond (Rony) Joseph ARAYGI holds a Lebanese Master's in Law and a Diploma of Higher Studies (DES) in Private Law from Saint Joseph University—Beirut. Admitted to the Beirut Bar in 1989, Rony is the Managing Partner of ARAYGI & MAALOULY LAW FIRM, established in 1998. Since then, he has been involved in numerous commercial, corporate, fiscal, taxation, and criminal matters. Rony has also participated in international and local arbitrations, both ad hoc and institutional, including under the Rules of the ICC International Court of Arbitration, the Dubai International Arbitration Center (DIAC), and the Lebanese Arbitration and Mediation Center (LAMC), handling a variety of matters such as post-M&A, distribution, construction, joint ventures, and intellectual property. Rony served as Lebanon's Minister of Culture from February 2014 to December 2016 and received the French civilian distinction of "Commandeur des Arts et des Lettres" in 2016.

- Transparency Issues: Many AI-driven decisions lack clarity, making it difficult to ensure procedural fairness.
- Liability Uncertainty: it raises a question about who is legally responsible if AI makes errors” (Interview, February 14, 2025).²¹⁷

IV. Conclusion

In conclusion, the intersection of AI in international arbitration, mainly across inter-state, international investment, and international commercial arbitration, highlights an innovative and transformative opportunity to enhance efficiency, reduce costs, and even improve arbitration procedures. AI tools, whether they are used as predictive analysis tools or tools to support the arbitration procedures, hold promise and benefits of making international arbitration more effective. However, despite these benefits, drawbacks and challenges are also present. The potential drawbacks, like bias, lack of transparency, and even AI hallucinations, require us as legal professionals to be careful and balance between the use of such tools and maintaining the main characteristics of international arbitration. Noting that the ethical, legal, and procedural frameworks and regulations should also evolve to help tackle these benefits and drawbacks more effectively, especially since arbitration serves as the main stone of dispute resolution on a global level. As I mentioned in my blog post published in *The American Review of International Arbitration Journal*, we can deduce that the integration of AI into international arbitration has a powerful impact on the arbitration process and international arbitration in general by increasing efficiency and reducing the time cases take, especially with the increased use of arbitration as a dispute resolution mechanism. Despite the challenges that could arise from the integration, application, and use of these tools, these challenges are challenges that we cannot overcome and can be effectively addressed with the right safeguards and governance. After carefully addressing and assessing these challenges, there is no big deal about using AI in the international arbitration field, increasing the benefits of international arbitration as a dispute resolution mechanism. The overall impact of AI is more of a natural progression, enhancing arbitration without fundamentally altering its core principles. As long as the technology is carefully managed, it enhances efficiency, reduces costs, and improves consistency in decision-making, without posing a significant threat to the arbitration process as a whole.²¹⁸

The crossroad of this intersection and its benefits and drawbacks highlight and raise one main critical question: how will AI shape the future of international arbitration across inter-state, international investment, and international commercial arbitration?

²¹⁷ Raymond (Rony) Joseph ARAYGI, Interview by Layan Al Fatayri, Virtual, February 14, 2025.

²¹⁸ Al Fatayri, Layan. 2024. “AI in International Arbitration: What Is the Big Deal?” - *American Review of International Arbitration*. American Review of International Arbitration - Columbia Law School. October 22, 2024. <https://aria.law.columbia.edu/ai-in-international-arbitration-what-is-the-big-deal/>.

CHAPTER 5

Shaping the Future of International Arbitration: The Role of Artificial Intelligence in Inter-State, International Investment, and International Commercial Arbitration.

I. Introduction

AI is significantly reshaping many sectors, including the arbitration sector, which is not exempt from the invasion of this innovative tool. AI technological tools such as machine learning tools, natural language processing, and predictive analytics are being significantly used in the arbitration process and by arbitrators to improve the process, increase efficiency, reduce costs, and enhance the overall arbitration process and procedures. LegalTech innovations, including AI-driven tools, are adjusting tasks like document review, legal research, and contract analysis to AI technological tools. These AI technological tools are being applied in ADR, offering unique solutions and improving the efficiency of solving legal disputes.²¹⁹

In other words, ADR, or practically international arbitration, is significantly influenced by the rapid advancement of innovative AI tools. These tools enjoy several benefits, such as cost and time efficiencies, enabling online case filing, e-evidence collection, and even remote hearings. Yet, on the other hand, these innovative AI tools also introduced several drawbacks and challenges that need to be taken into account to have a bright outcome of such tools in the field. Legal practitioners like Elliot Friedman, Freshfields Partner and Head of International Arbitration – Americas, stated that “AI will find its way into international arbitration practice, like most other places. AI has great capacity to reduce costs and increase accuracy and efficiency, but it also comes with risks – as two New York lawyers recently experienced when the AI-generated case law in their brief turned out not to exist. Like in many other areas, it will pay to approach AI’s role in international arbitration cautiously and with an open mind”.²²⁰ Taking into account these benefits and drawbacks, a crucial question should be tackled on how AI will impact and shape the future of alternative dispute resolution across inter-state, international investment, and international commercial arbitration.

While AI impact is noticeable across several legal areas, this chapter will focus on answering the ongoing question of “How Will Artificial Intelligence Shape The Future of Alternative Dispute Resolution Across Inter-State, International Investment, and International Commercial Arbitration?” In other words, this chapter tackles the evolving future of AI in ADR, especially in inter-state, international investment, and international commercial arbitration. Building on the insights discussed in *Chapter Four (4)* above, which addressed the intersection of AI along with its benefits and drawbacks, this chapter focuses on the future of AI in ADR across inter-state, international investment, and international commercial arbitration. As we are moving towards a digitalized legal landscape, this chapter tackles how AI might and will transform the arbitration field and redefine roles within the field. By exploring potential developments, innovations, and AI tools used, this chapter will provide a forward-looking analysis of how AI will shape the future of ADR in general and inter-state, international investment, and international commercial arbitration in specific. Through these insights, we aim to uncover the evolution of international arbitration within the AI era by offering views on how the future of international arbitration holds.

²¹⁹ Surden, Harry. 2019. “Artificial Intelligence and Law: An Overview.” *Georgia State University Law Review* 35: 1305. <https://scholar.law.colorado.edu/faculty-articles/1234>

²²⁰ Friedman, Elliot, Marta García Bel, Veronika Timofeeva, and Desmond Chong. “Generative AI: Opportunities and Risks in Arbitration.” English (United Kingdom). <https://www.freshfields.com/en-gb/our-thinking/campaigns/international-arbitration-in-2024/generative-ai-opportunities-and-risks-in-arbitration/>.

II. The Future Ahead: AI Technological Tools

AI technological tools are known to operate on the basis that all aspects of learning and intelligence are carefully analyzed and understood, which are replicated through a computer program.²²¹ In other words, AI refers to the ability of machines to prove intelligence in performing tasks associated with human input. It encompasses efforts to develop and expand systems that have abilities similar to humans, such as reasoning, analysis, review, and even learning from previous mistakes. According to legal practitioners, AI represents a form of digital technology with the ability to impact human and legal development in the future and shape the process of things.²²² Since early 2023, generative AI tools in the form of large language models, like ChatGPT, have achieved popularity, having a significant impact on various fields, including the legal sector. Some of these popular events of AI tools in the legal field include ChatGPT passing the New York Bar Exam²²³, and even when two New York lawyers were sentenced for relying on fictional case law generated by ChatGPT.²²⁴ Nonetheless, these are not the only AI tools used in the field. Beyond these eye-catching events on the use of AI, other forms of AI have been integrated and used in the legal field, including international arbitration, throughout the years.

This section aims to tackle the various ways AI is being used in the field, focusing on both the current AI tools as well as those tools that are expected to develop further in the future. Noting that AI has long been a part of international arbitration practice. For years, various AI technological tools have been used to assist legal practitioners with the management of cases, document review, and selecting arbitrators, in addition to several other tasks.²²⁵

A. What Are The Current AI Applications?

Long before the widespread use of generative AI tools and large language models like ChatGPT, there were AI tools that had already been used in the arbitration field for years. Those tools have facilitated the workflow of cases, decision-making, and even reduced costs. Those tools include

²²¹ Chauhan, Aditya Singh. 2020. "Future of AI in Arbitration: The Fine Line between Fiction and Reality." Kluwer Arbitration Blog. September 26, 2020. <https://arbitrationblog.kluwerarbitration.com/2020/09/26/future-of-ai-in-arbitration-the-fine-line-between-fiction-and-reality/>.

²²² Maheshwari, Varun and Mishra, Arindam, The Future of International Arbitration in the Age of Artificial Intelligence (October 11, 2023). Available at SSRN: <https://ssrn.com/abstract=4863353> or <http://dx.doi.org/10.2139/ssrn.4863353>

²²³ Katz, Daniel Martin and Bommarito, Michael James and Gao, Shang and Arredondo, Pablo, GPT-4 Passes the Bar Exam (March 15, 2023). 382 Philosophical Transactions of the Royal Society A (2024), Available at SSRN: <https://ssrn.com/abstract=4389233> or <http://dx.doi.org/10.2139/ssrn.4389233>

²²⁴ Merken, Sara. 2023. "New York Lawyers Sanctioned for Using Fake ChatGPT Cases in Legal Brief." Reuters, June 26, 2023, sec. Legal. <https://www.reuters.com/legal/new-york-lawyers-sanctioned-using-fake-chatgpt-cases-legal-brief-2023-06-22/>.

²²⁵ Chan, Elizabeth and Gore, Kiran Nasir and Jiang, Eliza, Harnessing Artificial Intelligence in International Arbitration Practice (November 29, 2023). Contemporary Asia Arbitration Journal, Vol. 16, No. 2, pp. 263-300, November 2023, Available at SSRN: <https://ssrn.com/abstract=4648246>

NLP, text mining, machine learning tools, predictive analytics, speech recognition, pattern recognition, and Optical Character Recognition (OCR).²²⁶ But what do these tools refer to?

NLP refers to the tools that are used to translate legal documents, summarize case laws, and even identify information from legal texts.²²⁷ These types of tools play a crucial role in international arbitration and across inter-state, international investment, and international commercial arbitration due to their multinational nature, where parties in a dispute come from diverse language backgrounds. Through these kinds of AI tools, the arbitration field can overcome the language barrier and enhance smoother communication between parties, lawyers, and even arbitrators. Text-mining tools refer to the tools that handle the analysis and extraction of information from the text to identify and highlight important information and key facts from the document.²²⁸ After analyzing and extracting the key information and facts, this information is then utilized to classify and organize the data. This process used in the arbitration process assists arbitrators in effectively handling large volumes of legal documents and facilitates document review, legal research, and even document management. On the other hand, machine learning mechanisms are the most used mechanisms in the current AI tools. These machine-learning tools rely on detecting patterns based on the existing data and user feedback. A known branch of this type of machine learning is known as deep learning, which imitates the function of the human brain. These tools can directly identify features by analyzing the large volume of pre-existing data, making them effective in processing the unstructured data.²²⁹

Moreover, another type of AI tool that is currently being used within the arbitration process is predictive analytics tools. These tools are used to predict future outcomes. But how are they used within the arbitration process? These tools are used to analyze past cases and to predict future outcomes of the case at hand, either by confirming the successful outcome or even suggesting a way of settlement.²³⁰ However, these tools differ from speech and pattern recognition tools. Speech recognition tools are tools that can convert the speech of parties or arbitrators into written text. By analyzing spoken words, these tools help save time, improve accuracy, and create a more organized and researchable text of speech between the parties involved in the case at hand.²³¹ It should also be noted that these kinds of technological tools play a beneficial role for arbitrators who need to reference and review discussions made during an arbitration process. On the other hand, pattern recognition tools are tools used to analyze cases to identify similarities and

²²⁶ Chan, Elizabeth and Gore, Kiran Nasir and Jiang, Eliza, Harnessing Artificial Intelligence in International Arbitration Practice (November 29, 2023). Contemporary Asia Arbitration Journal, Vol. 16, No. 2, pp. 263-300, November 2023, Available at SSRN: <https://ssrn.com/abstract=4648246>

²²⁷ “What Is Natural Language Processing (NLP)? | NLP Natural Language Processing | NLP in Artificial Intelligence | Lumenalta.” 2025. Lumenalta. <https://doi.org/1019928/1920x728/e4f23f894c>.

²²⁸ Wagh, Rupali. 2013. “Knowledge Discovery from Legal Documents Dataset Using Text Mining Techniques.” International Journal of Computer Applications 66 (23): 975–8887. <https://research.ijcaonline.org/volume66/number23/pxc3886501.pdf>.

²²⁹ Chauhan, Aditya Singh. 2020. “Future of AI in Arbitration: The Fine Line between Fiction and Reality.” Kluwer Arbitration Blog. September 26, 2020. <https://arbitrationblog.kluwerarbitration.com/2020/09/26/future-of-ai-in-arbitration-the-fine-line-between-fiction-and-reality/>.

²³⁰ Dr. Aline Tanielian Fadel. 2021. “Predictive Analytics and Diversity in International Arbitration: Friends or Foes? – American Review of International Arbitration.” Columbia.edu. October 8, 2021. <https://aria.law.columbia.edu/predictive-analytics-and-diversity-in-international-arbitration-friends-or-foes/>.

²³¹ Daniel Faggella. 2019. “AI for Speech Recognition and Transcription in Law and Legal | Emerj Artificial Intelligence Research.” Emerj Artificial Intelligence Research. Emerj. March 29, 2019. <https://emerj.com/ai-for-speech-recognition-transcription-law-legal/>.

differences between these cases and other related court rulings and decisions. Finally, we refer to OCR tools. These tools rely on machine learning and computer vision. These tools are arranged to transform scanned documents and images into text, which allows the extraction of required data.²³²

But how are these tools stated above currently used in the international arbitration field?

To answer this question, we would refer to the “Survey of Arbitral Institutions For The ICCA Congress Panel on AI”. In the preparation of the “International Arbitration: An AI Endeavor” session at the ICCA Congress in Hong Kong on May 08, 2024, the panelists aimed to study the current use of AI within the arbitration practice and by arbitration practitioners and institutions. To conduct this survey, the panelists distributed the questions of the survey²³³ to both international and regional arbitration institutions inquiring about their current use and integration of AI within their practice by focusing on 4 key areas: (a) Internal operations, (b) Case Management, (c) Enhancement of existing dispute resolution services, and (d) Development of new AI-driven services and tools.

Only 11 arbitration institutions participated in the survey of the 18 arbitration institutions that were present, whether international or regional institutions. Of the 11 arbitration institutions that participated in the survey, 4 have reported the use of AI, while the others are assessing and evaluating its future to know when it should be incorporated into their practice. For example, the participating institution is following a 3-stage process of integration of AI within its practice. The first stage is related to the gain of knowledge of the AI tools, the second stage is to identify the most appropriate use of AI, and the third stage is to address any risks that could arise from such integration and use.²³⁴

These 4 arbitration institutions and firms that reported the use of AI have used AI in different ways and for different scopes of work. One of the institutions relies on a team of engineers and developers to manage the AI tools that handle various tasks such as generating case reports, drafting communications for parties and arbitrators, monitoring case deadlines, assisting with hearing arrangements, and even reviewing draft awards. Moreover, this institution has also declared that it uses AI tools and systems to draft sections of the arbitral award. The other institution stated that it had established a work group and made this group's main scope of work dedicated to ensuring that the application of AI tools and systems is conducted reasonably and innovatively. The organization has identified 60 ways of applying AI into its practice, one of which is in terms of case management, where the institution has developed an AI tool that automates scheduling matters and creates a timetable in under minutes using the preliminary hearing transcript.

²³² Chan, Elizabeth and Gore, Kiran Nasir and Jiang, Eliza, Harnessing Artificial Intelligence in International Arbitration Practice (November 29, 2023). Contemporary Asia Arbitration Journal, Vol. 16, No. 2, pp. 263-300, November 2023, Available at SSRN: <https://ssrn.com/abstract=4648246>

²³³ “The Use of AI by Arbitral Institutions: Survey Questions.” <https://wolterskluwerblogs.com/arbitration/wp-content/uploads/sites/48/2024/05/Survey-Questions.pdf>.

²³⁴ “Are Arbitral Institutions Using Artificial Intelligence? The State of Play in Adopting AI - Kluwer Arbitration Blog.” 2024. Kluwer Arbitration Blog. May 8, 2024. <https://arbitrationblog.kluwerarbitration.com/2024/05/08/are-arbitral-institutions-using-artificial-intelligence-the-state-of-play-in-adopting-ai/>.

Furthermore, the third institution that declared the use of AI uses tools such as ChatGPT to enhance its internal workflow. It uses such tools to help with presentations, speeches, marketing purposes, and emails. Meanwhile, the fourth institution that participated in this survey and questionnaire declared the use of generative AI tools to brainstorm ideas and produce internal materials. According to the Kluwer Arbitration Blog titled “Are Arbitral Institutions Using Artificial Intelligence? The State of Play in Adopting AI”²³⁵ which has documented and analyzed this survey that has been conducted, stated that the organizations that declared that they are not utilizing AI but are interested in adopting such tools as their main focus lies on enhancing the efficiency of the workflow and achieving faster results while reducing the cost.

Moreover, a recent interview conducted by legal experts from Charles Russell Speechlys Firm has explored the impact and current application of AI on international arbitration. During this interview, one of the questions that was raised was: “How is AI currently being utilized in international arbitration, and what specific benefits does it offer in terms of efficiency and accuracy?”

They have tackled this question by stating that AI has been traditionally defined as the use of a computer to perform specific tasks based on predefined rules. These tools have been used in the arbitration field for years in the form of document review and disclosure purposes. For some time now, these AI tools have been hosting large amounts of data and can analyze their content to identify key terms to pinpoint relevant information and its connection with other data. This approach, according to legal experts, not only reduces time and cost but also helps reduce human errors and enables the uncovering of the data that might be unnoticed. They have added that Generative AI, such as ChatGPT, stands out by enabling computers to produce completely new documents and work products. Such applications in the arbitration field include assisting with drafting witness statements, reports, opening and closing submissions, and even awards. It can also analyze documents to formulate cross-examination questions and strategies.²³⁶

To add to the above, I have conducted interviews with experienced arbitrators from various jurisdictions and backgrounds, each with more than 10 years of experience in the field of arbitration, including in inter-state, international investment, and international commercial arbitration. Similarly, I have asked the arbitrators, “How has AI influenced your work in international arbitration, particularly in inter-state, International Commercial, and International Investment arbitration cases?” Based on that, I have received several additional valuable insights based on their experience.

²³⁵ “Are Arbitral Institutions Using Artificial Intelligence? The State of Play in Adopting AI - Kluwer Arbitration Blog.” 2024. Kluwer Arbitration Blog. May 8, 2024. <https://arbitrationblog.kluwerarbitration.com/2024/05/08/are-arbitral-institutions-using-artificial-intelligence-the-state-of-play-in-adopting-ai/>.

²³⁶ Snider, Thomas R, Patrick Gearon FCI Arb, and Dalal Alhouti. 2024. “Embracing AI’s Potential in Arbitration.” CRS. CRS. March 22, 2024. <https://www.charlesrussellspeechlys.com/en/insights/expert-insights/dispute-resolution/2024/harnessing-technology-embracing-ais-potential-in-arbitration/>.

*Mihaela Apostol*²³⁷ stated that “AI streamlined some repetitive and admin tasks. At the same time, it raised concerns about the integrity of evidence, reliance on cited cases, and maintaining the confidentiality of the proceedings” (Interview, January 03, 2025).²³⁸

*Sarah Reynolds*²³⁹ “I was the CEO of the non-profit organization Silicon Valley Arbitration & Mediation Center for two years. During my time there, I started engaging with AI in arbitration. Our main project was to develop guidelines for the responsible use of AI in arbitration. I spent a lot of time considering what the guidelines could be, the approaches to take, and whose input we should seek.

AI tools have developed rapidly, but at the time of the project, ChatGPT had just been introduced and was still in its infancy. Over the course of a year, however, these tools became more sophisticated and effective. When we were developing the guidelines, the work was somewhat theoretical because, at that time, people weren’t yet widely integrating AI into arbitration. Today, however, they certainly are. The goal of the project was to build a global consensus about the ethics and guidelines for AI use in arbitration—when or whether its use needs to be disclosed, and what the disclosure obligations should be. The idea was to trigger a conversation within the global ADR community to encourage discussions about these issues so that we could begin to develop a consensus on what arbitrators should expect and how they should act.

This was my first experience engaging with AI in arbitration. Since then, I’ve continued to see AI tools introduced into arbitration processes. I’ve spoken and written about this topic extensively, and now I can confidently say that the AAA has been a leader in integrating AI into arbitration. They’ve hired people whose primary focus is to research and implement new AI tools. They’ve introduced several innovations, such as the AI Clause-BUILDER, which helps users generate clauses, and, just recently, an AI-based arbitrator search engine. This tool allows users to input keywords, and it generates a list of arbitrators tailored to their needs.

Additionally, arbitrators now have access to AI tools that assist with generating scheduling orders through AI integration. While these tools automate certain tasks, human arbitrators still review the outcomes before circulating drafts. For repetitive tasks that can be handled by AI, we should leverage these tools to reduce time and costs for the parties involved, reinforcing the efficiency of arbitration as a dispute resolution method.

I can confidently say I’ve engaged with numerous AI tools. As counsel, I’ve seen the market now offer a wide array of AI-integrated tools to assist with tasks such as brief writing, compiling procedural histories, summarizing documents, and various other matters. These tools help save

²³⁷ Mihaela Apostol is an independent counsel and arbitrator based in London. Mihaela is a civil and common law qualified lawyer with ten years of experience in international arbitration having worked as counsel, tribunal secretary and arbitrator. She is an Avocat of the Bar of Bucharest, Romania and a Solicitor of the Supreme Court of England and Wales.

²³⁸ Mihaela Apostol, Interview by Layan Al Fatayri, Virtual, January 03, 2025.

²³⁹ Sarah Reynolds is an independent arbitrator based in the United States. She is cross licensed in the US, U.K. and Ireland. Sarah focuses on cross-border and domestic commercial disputes and is a former partner in the international arbitration practice of Mayer Brown LLP.

time and simplify processes, making them invaluable from a counsel's perspective" (Interview, January 10, 2025).²⁴⁰

*Dragana Nikolić*²⁴¹ "So far, AI has not significantly influenced my work in international arbitration. I have used AI tools to perform certain minor tasks, but I remain cautious and hesitant to use AI for any substantive work" (Interview, January 19, 2025).²⁴²

Furthermore, *Raymond (Rony) Joseph Araygi*²⁴³ stated, "I would like to highlight that, like many legal professionals, I have recently begun integrating AI into our work. While AI's application in the legal field broadly aligns with other legal practices, it offers distinct advantages in both domestic and international arbitration. Even though arbitration does not impose unique technical requirements on AI beyond those found in other areas of law, its integration brings important considerations regarding efficiency, fairness, and procedural integrity. AI has the potential to streamline arbitration processes, to facilitate the comparison of legal texts and documents, to help and improve access to relevant legal resources, making it a valuable tool in the evolving landscape of dispute resolution" (Interview, February 14, 2025).²⁴⁴

B. What Are The Next Decade AI Applications?

The application of AI in international arbitration, specifically, international commercial, international investment, and inter-state arbitration, is positioned for significant transformation over the next few decades. In this section, we aim to explore the next decade of AI applications in the international arbitration field. We aim to provide an overview of the expected turnover in the use and application of AI in international arbitration.

As new technological tools and AI continue to develop and evolve, it is likely to reshape the international arbitration field in general and the arbitration process in particular. A survey conducted by Above the Law and Wolters Kluwer, which involved 275 legal professionals, shows that 80% of the participants believe that Generative AI tools will significantly change tasks in the law field, including the arbitration field, in the next few decades. This significant shift that they believe will happen in the next decades of the AI application reflects a broader trend in the legal

²⁴⁰ Sarah Reynolds, Interview by Layan Al Fatayri, Virtual, January 10, 2025.

²⁴¹ Dragana Nikolić is an independent attorney-at-law admitted to the bar in Serbia, cooperating with Queritius as Counsel. She specializes in international commercial and investor-state arbitration, managing complex cross-border cases before leading arbitration institutions, and serves as the regional representative for Young ICCA in Europe. Additionally, Dragana holds a bachelor's degree from the University of Belgrade Faculty of Law and master's degrees in international law from the University of Cambridge and the University of Belgrade.

²⁴² Dragana Nikolić, Interview by Layan Al Fatayri, Virtual, January 19, 2025.

²⁴³ Raymond (Rony) Joseph ARAYGI holds a Lebanese Master's in Law and a Diploma of Higher Studies (DES) in Private Law from Saint Joseph University—Beirut. Admitted to the Beirut Bar in 1989, Rony is the Managing Partner of ARAYGI & MAALOULY LAW FIRM, established in 1998. Since then, he has been involved in numerous commercial, corporate, fiscal, taxation, and criminal matters. Rony has also participated in international and local arbitrations, both ad hoc and institutional, including under the Rules of the ICC International Court of Arbitration, the Dubai International Arbitration Center (DIAC), and the Lebanese Arbitration and Mediation Center (LAMC), handling a variety of matters such as post-M&A, distribution, construction, joint ventures, and intellectual property. Rony served as Lebanon's Minister of Culture from February 2014 to December 2016 and received the French civilian distinction of "Commandeur des Arts et des Lettres" in 2016.

²⁴⁴ Raymond (Rony) Joseph ARAYGI, Interview by Layan Al Fatayri, Virtual, February 14, 2025.

sector, where such AI tools are expected to automate tasks and streamline workflow, reshaping the field.²⁴⁵

In the next decade, every document and management platform is expected to integrate and use generative AI tools and systems as a standard and essential feature to facilitate work and be able to analyze large amounts of data. At a recent “Thomson Reuters Institute’s 23rd Annual Law Firm COO & CFO Forum,” panelists discussed areas where AI is likely to have the greatest impact on law firms and their corporate clients. One of the panelists stated, “I think AI will have an impact beyond what we can even imagine yet.” They added that “it’s obvious that GenAI potentially can save lawyers lots of time in work hours, but exactly which work will be impacted?”²⁴⁶

Taking into consideration this question raised by the panelist, specialized legal research platforms such as JusMundi (JusAI) and Lexis AI are now integrating GPT-powered “copilots” to assist in several tasks within the arbitration process, including the summarization of case laws, arbitration awards, drafting briefs, and providing a comprehensive legal database. This development provides arbitrators with immediate access to a large amount of legal arbitration databases, offering them the ability to make more informed decisions and even more persuasive arguments. The growing adoption of generative AI tools and systems, which are also known as “copilots,” is simplifying the process of navigating the arbitration’s vast amount of information significantly simplifying several aspects of the arbitration process.²⁴⁷ And with the prediction that these generative AI tools and systems that are positioned for further transformation and development within the next decades will significantly affect the arbitration process. Moreover, several international law firms are recently developing in-house secure generative AI tools and systems similar to ChatGPT, enabling them to protect the confidentiality of their parties and, at the same time, to conduct their tasks such as legal research, generating legal content, summaries, and extracting legal data. For example, Dentons, a global law firm, introduced the launch of its secure version of ChatGPT called “fleetAI,” designed to enable its lawyers to utilize such generative AI tools in their current arbitration cases. Note that this generative AI cannot be accessed by anyone outside the Denton team, and the information uploaded to it will be erased within 30 days. The CEO of Denton in the UK, UK, Ireland, and the Middle East CEO, Paul Jarvis, mentioned that “The ability to upload and analyze client matter documents at speed and in a secure manner is the real game-changer - we believe Dentons will be the first law firm that has the technology to systematically incorporate generative AI into our day-to-day matter workflows”. “The use cases for fleetAI have been identified and tested with clients during the development phase and we are confident this is going to fundamentally transform the way we deliver services to them”. Additionally, Denton stated that

²⁴⁵ Chan, Elizabeth and Gore, Kiran Nasir and Jiang, Eliza, Harnessing Artificial Intelligence in International Arbitration Practice (November 29, 2023). Contemporary Asia Arbitration Journal, Vol. 16, No. 2, pp. 263-300, November 2023, Available at SSRN: <https://ssrn.com/abstract=4648246>

²⁴⁶ greggworth. 2024. “Law Firm COO & CFO Forum: AI’s Potential Impacts on the Legal Industry - Thomson Reuters Institute.” Thomson Reuters Institute. November 7, 2024. <https://www.thomsonreuters.com/en-us/posts/legal/law-firm-coo-cfo-forum-ai-potential-impacts/>.

²⁴⁷ Ibid

future versions of “fleetAI” are being developed to link it with Dentons’ existing legal automation tools.²⁴⁸

We can see that AI tools and systems are redefining the international arbitration field. Legal research and drafting are underway to be automated by AI systems and tools. The existing and even new AI legal research tools and systems will enhance the ability of arbitrators to have access to large amounts of information and data and be able to generate summaries more efficiently. AI-powered technologies are expected to speed up the process of preparing legal documents, such as legal memoranda, witness statements, and expert reports. Through internal systems powered by GPT used by arbitration firms, these tools can access the firm’s case law database and legal research databases to automatically generate initial drafts. They will shape documents by applying relevant legal tests, citing appropriate authorities, and tailoring content to match the firm’s drafting style, based on the unique facts of the case. In addition to preparing legal memoranda, AI-powered tools are also expected to assess the strength of legal arguments. These systems are expected to be able to formulate potential counterarguments, supported by relevant sources such as case law, laws, and regulations, to strengthen or challenge the positions presented in a case. Moreover, automation is also expected to revolutionize document production and e-discovery processes. The manual task of reviewing documents for production may be completely automated in the future. Arbitration professionals will be able to use AI-based search techniques to automatically retrieve all documents that are relevant to a factual or legal issue, or that respond to a document production request. We can deduce that with this evolving landscape of the use of technological AI tools in the arbitration field, several tasks will be automated by these tools. Yet also arbitrators handling and using these AI tools may be required to become legal-AI engineers and legal-AI data specialists to efficiently use such AI tools within the arbitration process.

To gain a better understanding of how AI may shape the field of international arbitration in the coming decades and its impact on arbitrators, I asked them within the interview, “How do you foresee AI impacting the roles of arbitrators, lawyers, and other legal practitioners in arbitration?”

According to *Mihaela Apostol*²⁴⁹ “AI will likely augment, rather than replace, the roles of arbitrators and lawyers. Arbitrators may increasingly rely on AI for analysis and decision support, enabling them to focus on the interpretive and judgmental aspects of cases. Lawyers will find their roles shifting towards higher-level tasks like strategy and advocacy, as AI handles much of the routine research and documentation. Administrative staff may see their roles diminished as case management and logistical functions become automated. Overall, AI will push practitioners to refine their technical, analytical, and ethical oversight skills” (Interview, January 03, 2025).²⁵⁰

²⁴⁸ “Dentons to Launch Client Secure Version of ChatGPT.” [www.dentons.com. https://www.dentons.com/en/about-dentons/news-events-and-awards/news/2023/august/dentons-to-launch-client-secure-version-of-chatgpt](https://www.dentons.com/en/about-dentons/news-events-and-awards/news/2023/august/dentons-to-launch-client-secure-version-of-chatgpt).

²⁴⁹ Mihaela Apostol is an independent counsel and arbitrator based in London. Mihaela is a civil and common law qualified lawyer with ten years of experience in international arbitration having worked as counsel, tribunal secretary and arbitrator. She is an Avocat of the Bar of Bucharest, Romania and a Solicitor of the Supreme Court of England and Wales.

²⁵⁰ Mihaela Apostol, Interview by Layan Al Fatayri, Virtual, January 03, 2025.

According to *Sarah Reynolds*²⁵¹ “I think AI tools are used to make things easier and faster, and they will impact the arbitrators' ability to take on more cases and decide cases more quickly. I think arbitrators who embrace these tools and understand how to use them have an advantage in the market because parties will know that efficiency will be introduced into their process” (Interview, January 10, 2025).²⁵²

According to *Dragana Nikolić*²⁵³ “It is too early to predict how AI may impact the roles of arbitrators and other legal practitioners in arbitration, as this largely depends on further technological advancements in AI tools, regulative frameworks, and the compliance of other stakeholders in arbitration. I believe its use will inevitably become more common, but it remains uncertain to what extent it will be utilized” (Interview, January 19, 2025).²⁵⁴

Additionally, according to *Raymond (Rony) Joseph Araygi*²⁵⁵,

- “Arbitrators: AI will assist in decision-making but will not replace arbitrators due to the need for human judgment.
- Legal Practitioners: Lawyers will need to integrate AI tools into case preparation, research, and argumentation.
- Administrative Staff: AI will automate case management, making arbitration proceedings more efficient” (Interview, February 14, 2025).²⁵⁶

Moreover, one important area that will be affected in the next decade by the use of AI is the traditional billing model, which is often associated with intensive legal hours and the costs associated with manual tasks in arbitration. By automating the various processes and tasks within arbitration proceedings, AI tools, including generative AI, not only improve efficiency and accuracy but also revolutionize the traditional billing structures that have long governed the arbitration process. Traditionally, arbitration has been billed by the hour, with parties paying for the time spent by arbitrators, lawyers, and experts on the case. Legal fees often constitute a significant portion of the overall costs of arbitration. The billing model in arbitration, particularly in complex international disputes, is characterized by high hourly rates, long hours of document

²⁵¹ Sarah Reynolds is an independent arbitrator based in the United States. She is cross licensed in the US, U.K. and Ireland. Sarah focuses on cross-border and domestic commercial disputes and is a former partner in the international arbitration practice of Mayer Brown LLP.

²⁵² Sarah Reynolds, Interview by Layan Al Fatayri, Virtual, January 10, 2025.

²⁵³ Dragana Nikolić is an independent attorney-at-law admitted to the bar in Serbia, cooperating with Queritius as Counsel. She specializes in international commercial and investor-state arbitration, managing complex cross-border cases before leading arbitration institutions, and serves as the regional representative for Young ICCA in Europe. Additionally, Dragana holds a bachelor's degree from the University of Belgrade Faculty of Law and master's degrees in international law from the University of Cambridge and the University of Belgrade.

²⁵⁴ Dragana Nikolić, Interview by Layan Al Fatayri, Virtual, January 19, 2025.

²⁵⁵ Raymond (Rony) Joseph ARAYGI holds a Lebanese Master's in Law and a Diploma of Higher Studies (DES) in Private Law from Saint Joseph University—Beirut. Admitted to the Beirut Bar in 1989, Rony is the Managing Partner of ARAYGI & MAALOUY LAW FIRM, established in 1998. Since then, he has been involved in numerous commercial, corporate, fiscal, taxation, and criminal matters. Rony has also participated in international and local arbitrations, both ad hoc and institutional, including under the Rules of the ICC International Court of Arbitration, the Dubai International Arbitration Center (DIAC), and the Lebanese Arbitration and Mediation Center (LAMC), handling a variety of matters such as post-M&A, distribution, construction, joint ventures, and intellectual property. Rony served as Lebanon's Minister of Culture from February 2014 to December 2016 and received the French civilian distinction of "Commandeur des Arts et des Lettres" in 2016.

²⁵⁶ Raymond (Rony) Joseph ARAYGI, Interview by Layan Al Fatayri, Virtual, February 14, 2025.

review, extensive legal research, and lengthy hearings. However, the increased application of technological AI tools, including generative AI to arbitration, threatens to change these traditional billing structures in several key ways in the next decades.²⁵⁷ One of the major impacts of AI tools on the arbitration billing model is the reduction of billable hours. Tasks that once required human arbitrators' intervention, such as document review, drafting, and legal research, can now be performed by AI systems in much less time. As a result, the overall time spent on these tasks is reduced, which directly impacts the number of hours that lawyers and arbitrators can bill clients. Yet, not only will it reduce the number of hours that lawyers and arbitrators can bill clients, but it will also result in applying alternative fee arrangements. These alternative fee arrangements include "flat fees". Flat fees include a fixed billing model, which involves setting a fixed amount in advance for specific legal services, regardless of the time or effort involved. This method provides clients with transparency and predictability in costs, as they know how much they will be charged from the outset, regardless of the length of the legal work. This model works well in transactional services, as it increases efficiency and balances the interests of the client and the lawyer to achieve positive outcomes.²⁵⁸ Also, "success fees" are another alternative fee arrangement. A success fee is a payment that an attorney receives based on a positive outcome in a case. This fee is often a percentage of the client's financial gain or a specific reward for achieving certain goals. Compared to outcome-based billing, a success fee may be paid in addition to the attorney's other payments. Although this fee can be reduced, the client may still be required to pay the attorney even if the case is lost.²⁵⁹

On top of that, one of the interesting billing approaches and alternative fee arrangements that will be efficient in reshaping the billing practice is the "technology fees" that some legal practitioners have suggested. These "technology fees," as defined by legal practitioners, take into consideration the potential savings that clients and parties could save due to the increased use of AI tools within the arbitration process. According to legal practitioners, they believe that this fee approach will not only harmonize the interests of the parties involved in the dispute but also increase the importance of the main characteristic of international arbitration, transparency.²⁶⁰ From my point of view on this fee suggestion, this approach to billing will be extremely important in the next decade's legal environment, where technology is transforming the way legal arbitration services are delivered. The use of AI, machine learning, and other digital AI tools in arbitration improves the efficiency of the process and streamlines many time-consuming tasks, such as document review, legal research, and drafting procedural orders. This time, resource savings translate into cost savings for clients. It is therefore appropriate that these savings be recognized and passed on to clients in the form of a technology fee. Additionally, the introduction of technology fees offers a more transparent and equitable pricing model that helps align the interests of clients and legal professionals. Clients can experience lower costs through the efficiency gains achieved through

²⁵⁷ "How Generative AI Is Disrupting Law Firm Billing Practices." [www.lexisnexis.com. https://www.lexisnexis.com/community/insights/legal/b/thought-leadership/posts/how-generative-ai-is-disrupting-law-firm-billing-practices](https://www.lexisnexis.com/community/insights/legal/b/thought-leadership/posts/how-generative-ai-is-disrupting-law-firm-billing-practices).

²⁵⁸ Ibid

²⁵⁹ Ibid

²⁶⁰ Chan, Elizabeth and Gore, Kiran Nasir and Jiang, Eliza, Harnessing Artificial Intelligence in International Arbitration Practice (November 29, 2023). Contemporary Asia Arbitration Journal, Vol. 16, No. 2, pp. 263-300, November 2023, Available at SSRN: <https://ssrn.com/abstract=4648246>

the use of AI, while law firms can continue to maintain their profitability by charging for the advanced technology infrastructure they use. Last but not least, I believe that technology fees provide law firms with an opportunity to stand out in an increasingly competitive marketplace. By leveraging AI and other advanced technologies, firms can offer more advanced services that justify the introduction of these fees while providing clear value to clients. By charging a technology fee, law firms are recognizing that modern legal work no longer relies solely on human labor but is heavily leveraging technological resources to drive efficiency and successful outcomes in arbitration disputes.

So, we can deduce that in this sense, AI is likely to reshape not only how arbitration is conducted, but also how arbitral and legal services are economically valued, delivered, and justified in the years ahead.

To add to the above, I have asked the arbitrators the following question: “How do you envision the role of AI evolving in international arbitration over the next decade?” I have received insightful answers, and I can say that every arbitrator has their perspective on the evolving role of AI in international arbitration.

*Mihaela Apostol*²⁶¹ stated, “AI’s role in international arbitration will likely deepen and diversify. In the next decade, I foresee AI becoming a co-pilot in decision-making, providing arbitrators with detailed scenario analyses and risk assessments. We may also see the rise of AI-powered mediators for resolving low-stakes disputes or assisting with pre-arbitration negotiations. As AI tools become more sophisticated, they could help harmonize procedural rules across jurisdictions, making arbitration even more global. However, managing the ethical and procedural implications will be a constant challenge, requiring continuous refinement of legal and technological standards” (Interview, January 03, 2025).²⁶²

*Sarah Reynolds*²⁶³ stated, “I think we are likely to see some radical change. New products will be introduced every day, and it will be similar to any other technological revolution—it will start with a bunch of competitors, and then eventually a few standouts will become standard. There will be several AI tools, but I think we are only scratching the surface of what these tools can do for us and provide” (Interview, January 10, 2025).²⁶⁴

²⁶¹ Mihaela Apostol is an independent counsel and arbitrator based in London. Mihaela is a civil and common law qualified lawyer with ten years of experience in international arbitration having worked as counsel, tribunal secretary and arbitrator. She is an Avocat of the Bar of Bucharest, Romania and a Solicitor of the Supreme Court of England and Wales.

²⁶² Mihaela Apostol, Interview by Layan Al Fatayri, Virtual, January 03, 2025.

²⁶³ Sarah Reynolds is an independent arbitrator based in the United States. She is cross licensed in the US, U.K. and Ireland. Sarah focuses on cross-border and domestic commercial disputes and is a former partner in the international arbitration practice of Mayer Brown LLP.

²⁶⁴ Sarah Reynolds, Interview by Layan Al Fatayri, Virtual, January 10, 2025.

*Dragana Nikolić*²⁶⁵ stated, “Since I do not use AI daily or for a significant portion of my work, I am not fully familiar with all its pros and cons, making it difficult for me to predict how it will be utilized over the next decade” (Interview, January 19, 2025).²⁶⁶

*Raymond (Rony) Joseph Araygi*²⁶⁷ mentioned that “AI will be increasingly used for case research, document review, translation, and administrative automation. Hybrid arbitration models (AI-assisted but human-led) will emerge, and AI-driven arbitration systems may develop for low-value disputes. Additionally, AI ethics regulations will become stricter, addressing bias and transparency concerns” (Interview, February 14, 2025).²⁶⁸

But aside from the next decade and the future of AI applications, what is the future ahead for the regulatory landscape?

III. The Future Ahead: Regulatory Landscape

Building on the previous section that tackled the exploration of the advances of AI applications in the arbitration field, this section takes another shift to focus on the regulatory landscape that is shaped and will continue to shape the arbitration field. While AI tools and technologies have made a significant impact in recent years, their rapid use and growth in the field and the arbitration process have raised concerns about the transparency, accountability, and integrity of these tools. As AI continues to shape the arbitration practice, it is important to consider how arbitration organizations, institutions, legal frameworks, and arbitration mechanisms are adapting and addressing this technological advancement and shift in the field.

Therefore, this section will aim to examine the regulatory landscape that is being developed to address this technological AI shift, specifically the Silicon Valley Arbitration & Mediation Center (SVAMC) Guidelines on the Use of Artificial Intelligence in arbitration, The Chartered Institute of Arbitrators Guideline on the Use of AI in Arbitration (2025) along with other global efforts to ensure right integration of AI tools within the field.

²⁶⁵ Dragana Nikolić is an independent attorney-at-law admitted to the bar in Serbia, cooperating with Queritius as Counsel. She specializes in international commercial and investor-state arbitration, managing complex cross-border cases before leading arbitration institutions, and serves as the regional representative for Young ICCA in Europe. Additionally, Dragana holds a bachelor’s degree from the University of Belgrade Faculty of Law and master’s degrees in international law from the University of Cambridge and the University of Belgrade.

²⁶⁶ Dragana Nikolić, Interview by Layan Al Fatayri, Virtual, January 19, 2025.

²⁶⁷ Raymond (Rony) Joseph ARAYGI holds a Lebanese Master’s in Law and a Diploma of Higher Studies (DES) in Private Law from Saint Joseph University—Beirut. Admitted to the Beirut Bar in 1989, Rony is the Managing Partner of ARAYGI & MAALOUY LAW FIRM, established in 1998. Since then, he has been involved in numerous commercial, corporate, fiscal, taxation, and criminal matters. Rony has also participated in international and local arbitrations, both ad hoc and institutional, including under the Rules of the ICC International Court of Arbitration, the Dubai International Arbitration Center (DIAC), and the Lebanese Arbitration and Mediation Center (LAMC), handling a variety of matters such as post-M&A, distribution, construction, joint ventures, and intellectual property. Rony served as Lebanon’s Minister of Culture from February 2014 to December 2016 and received the French civilian distinction of “Commandeur des Arts et des Lettres” in 2016.

²⁶⁸ Raymond (Rony) Joseph ARAYGI, Interview by Layan Al Fatayri, Virtual, February 14, 2025.

A. SVAMC Guidelines

The arbitration landscape is encountering a major transformation with the integration of AI tools within the arbitration process. Courts have already experienced challenges with the integration and use of these AI tools, such as having lawyers referencing legal cases that do not exist in their briefs generated by AI tools, in addition to several other challenges, such as those mentioned in the previous chapter. Due to all these challenges, it is evident that having a guideline that raises awareness about AI and its limitations is essential to ensure the effective and appropriate use of such tools.

SVAMC, in collaboration with top technology companies, leading law firms, and alternative dispute resolution organizations, has proactively addressed these challenges through the recent guidelines issued on the use of AI in arbitration.²⁶⁹ On 30 April 2024, the group working on this guideline managed to establish the final version of the first edition of the guideline titled “Guidelines On The Use of Artificial Intelligence in Arbitration”.²⁷⁰ This guideline offers a collection of the best practices for integrating and using AI within the arbitration field and process. It aimed to address both the current and future applications of AI within the field and framework, noting that AI and technology will continue to develop at an increasing pace. Moreover, the guideline has recognized that the rise in the use of AI tools, including generative AI, has introduced benefits and drawbacks to the arbitration field and practice at both domestic and international levels. As mentioned in the previous chapter (Chapter 4), which tackled the intersection of AI with arbitration along with its benefits and drawbacks, AI has the potential to enhance efficiency and accuracy in several tasks, such as document review, legal research, translation, and drafting. It has also raised several concerns related to transparency, bias, confidentiality, and even due process. The establishment of SVAMC Guidelines on the use of AI in arbitration represents a key to the ongoing debate on these benefits and drawbacks.²⁷¹

The guideline has defined AI as any computer system that “perform[s] tasks commonly associated with human cognition, such as understanding natural language, recognizing complex semantic patterns, and generating human-like outputs.”²⁷² Additionally, the guideline included three parts. The first part included the guidelines addressed to all participants in arbitration, the second part included the guidelines addressed to parties and party representatives, and the third part included the guidelines addressed to arbitrators, in addition to a commentary section that addresses important issues of AI in the arbitration field and process. We will be tackling the three parts of the guideline and its commentary part of the guideline.

²⁶⁹ SVAMC. 2023. “SVAMC Set to Publish Pioneering AI Guidelines for International Arbitration – Silicon Valley Arbitration & Mediation Center.” Svamc.org. July 27, 2023. <https://svamc.org/svamc-set-to-publish-pioneering-ai-guidelines-for-international-arbitration/>.

²⁷⁰ “SVAMC Publishes Guidelines on the Use of Artificial Intelligence in Arbitration – Silicon Valley Arbitration & Mediation Center.” 2024. April 30, 2024. <https://svamc.org/svamc-publishes-guidelines-on-the-use-of-artificial-intelligence-in-arbitration/>.

²⁷¹ Perla, Juan. 2024. “A Closer Look at the New SVAMC Guidelines for AI in International Arbitration – American Review of International Arbitration.” Columbia.edu. May 23, 2024. <https://aria.law.columbia.edu/a-closer-look-at-the-new-svamc-guidelines-for-ai-in-international-arbitration/>.

²⁷² “SVAMC Publishes Guidelines on the Use of Artificial Intelligence in Arbitration – Silicon Valley Arbitration & Mediation Center.” 2024. April 30, 2024. <https://svamc.org/svamc-publishes-guidelines-on-the-use-of-artificial-intelligence-in-arbitration/>.

Starting with the first part of the guideline titled “Part I: Guidelines for All Participants in Arbitrations”. This part addressed the guidelines for all participants in arbitration by including 3 main guidelines. Guideline 1 of this part, titled “GUIDELINE 1: Understanding the uses, limitations, and risks of AI applications,” urges all participants to understand the AI tool's function, including the data that these AI tools are trained on, their ability to generate fabricated information which we referred to in our previous chapter as “hallucinations” along with their potential biases. According to several legal expert opinions, with which I also agree, the understanding of these factors is an essential aspect to determine which arbitrators and legal experts can rely on AI tools²⁷³.

Furthermore, guidelines 2 and 3 from this part titled “GUIDELINE 2: Safeguarding confidentiality” and “GUIDELINE 3: Disclosure” tackled the main concern related to confidentiality and disclosure. According to “GUIDELINE 2: Safeguarding confidentiality”, all participants are responsible for ensuring that the use of AI tools complies with their duties to maintain confidentiality. One of the main concerns is that submitting confidential and sensitive information to AI tools could result in risks, especially if these AI tools are not checked for security. Therefore, all participants in the arbitration process using AI tools are required to evaluate the tools used to make sure they meet the confidentiality requirements before submitting any information to these AI tools or systems. Moreover, this guideline also highlighted the importance of paying attention to the AI’s tools policies for recording, storage, and usage of data. Especially since some AI tools store the information provided, which poses a risk to confidentiality.

Furthermore, guideline 3 of this part, titled “GUIDELINE 3: Disclosure,” has also tackled an important concern. According to this guideline, there is no obligation to disclose the use of AI tools in arbitration. It means that the parties, unless there are specific reasons, do not necessarily have to inform each other about the use of AI technology in any part of the process. Yet, this is not absolute and is determined on a case-by-case basis. Any relevant circumstances of the case, including due process considerations and legal privilege, must be weighed. For instance, disclosure may be necessary where the use of an AI tool may affect the fairness of the arbitration or breach confidentiality or privilege. Where disclosure is deemed necessary, the passage suggests that some detail should be provided to ensure transparency and facilitate assessment of the role of the AI tool in arbitration. This detail includes the name of the tool, the version, and the settings used, as well as a brief description of how it was applied in the arbitration process. Furthermore, the full text entered into the tool should be shared, along with any relevant context, templates, or previous conversations, as well as the results produced by the tool. This information will enable the parties involved in arbitration to assess the reliability and appropriateness of the tool’s output, helping to ensure that it is consistent with the overall goals of fairness and equity in the process. Ultimately, the passage sets out a balanced approach: while disclosure is not routinely required, transparency should be ensured where necessary to preserve the integrity of the arbitration process and address any concerns about due process or legal privilege.

²⁷³ Perla, Juan. 2024. “A Closer Look at the New SVAMC Guidelines for AI in International Arbitration – American Review of International Arbitration.” Columbia.edu. May 23, 2024. <https://aria.law.columbia.edu/a-closer-look-at-the-new-svamc-guidelines-for-ai-in-international-arbitration/>.

On top of that, part 2 of the guideline titled “Part 2: Guidelines for Parties and Party Representatives” included two main guidelines. The first guideline in this part, titled “GUIDELINE 4: Duty of competence or diligence in the use of AI,”²⁷⁴ tackles the importance of adhering to ethical standards and rules, including the duties of competence and diligence. Moreover, this guideline and its commentary emphasized that even if AI humanly synthesizes information and data, this does not clear humans from responsibility in case of any errors. In other words, this guideline highlighted that although AI processes the data provided humanly, any errors or even “hallucinations” in the AI-generated outcomes remain the responsibility of the humans using this AI. In other words, it is the responsibility of the legal representatives to verify the accuracy and validity of the information generated by the AI tools before it is submitted to the arbitration process. This guideline also clarifies that the legal representative will be held responsible for the unreceived information or mistakes in the AI-generated outcomes. The justification for this responsibility is that just as work generated by humans is reviewed, legal professionals are responsible and required to review AI-generated outcomes to confirm the accuracy of the results before submitting them to any tribunal or court. Ultimately, this guideline stresses that the use of AI does not relieve legal professionals of their duty of due diligence, nor does it diminish their responsibility to ensure that final memoranda are of high quality and error-free. AI should be integrated into the legal field in a way that complements rather than replaces human judgment, with the human agent remaining fully accountable for the integrity of the work produced.

Moreover, the second guideline of this part, titled “GUIDELINE 5: Respect for the integrity of the proceedings and the evidence,” highlights and emphasizes that parties must not use AI to fabricate evidence or mislead the tribunal. It also warns parties and their legal representatives that AI tools have the potential to create and produce convincing fake information. Therefore, parties and legal representatives have to be careful when using AI tools and ensure the outcome given by AI. This concern goes beyond legal research and document drafting to include scenarios where the AI generates fake and fabricated citations, which could affect how evidence is assessed in international arbitration. In other words, this guideline emphasizes the importance of maintaining the integrity of the proceedings and evidence submitted within the process. It places clear responsibility on all parties involved in the process, including legal representatives within the arbitration process. This guideline prohibits the use of AI tools that could affect the credibility, integrity, and fairness of the process. This includes any action that affects the smooth conduct of the arbitration process and its principles.

Last but not least, the guidelines also included Part 3 titled “Part 3: Guidelines for Arbitrators”. We can see from the title that this guideline is related to arbitrators and is subject to their separate guidelines. The first guideline of this part, titled “GUIDELINE 6: Non-delegation of decision-making responsibilities,” clearly states the non-delegation of decision-making responsibilities to AI. In other words, according to this guideline, arbitrators are prohibited from outsourcing the

²⁷⁴ “SVAMC Publishes Guidelines on the Use of Artificial Intelligence in Arbitration – Silicon Valley Arbitration & Mediation Center.” 2024. April 30, 2024. <https://svamc.org/svamc-publishes-guidelines-on-the-use-of-artificial-intelligence-in-arbitration/>.

decision-making process and responsibilities to AI tools. This prohibition is grounded in the principle of integrity and maintains the independence and transparency of the arbitration process and decisions of this process. Although AI can be a helpful, valuable, and advanced tool for assisting arbitrators in automating tasks such as document review, summarizing cases, analyzing data, and drafting parts of the award, arbitrators should carefully review and validate the outcome given by AI tools before using them to base their decision on them. No matter how advanced these tools could be, they should not and cannot replace the judgment made by human arbitrators and their responsibility to decide the arbitration process, which significantly impacts the parties involved in the process. It is critical and crucial for arbitrators not only to rely on AI tools' outcomes and results but also to take an active role in reviewing and validating the results generated by these AI tools before using and incorporating these results in their final decision. Especially AI tools that, although they are powerful and helpful, can produce results and data that are not accurate and misleading.

Moreover, this part of the guideline included another guide titled “GUIDELINE 7: Respect for due process”. This guideline prohibits arbitrators from relying on any “AI-generated outputs outside the record”,²⁷⁵ unless they disclose this information and data to the parties involved in the arbitration process to provide them with the opportunity to review this information and comment on it. Through this strategy, we can ensure transparency and fairness within the arbitration process. This guideline aligns with the established ethical standards that tackle the conduct of arbitrators. These ethical standards include core standards such as independence, competence, impartiality, and duty to issue a fair and enforceable award. These core standards aim to safeguard the process and protect the rights of all parties involved in the process. The improper and undisclosed information during the arbitration process can result in undermining these fundamental standards, causing concerns about bias, lack of transparency, and unfairness, which affect the arbitration process and awards produced. At its core, the Seventh Guideline emphasizes the need for transparency, fairness, and accountability in the use of AI in arbitration. It ensures that AI is used as a tool to assist the process, but without impairing the parties' right to full participation or jeopardizing the credibility of evidence or reasoning used in the arbitration. By requiring disclosure of information and allowing parties to comment on AI-generated information, the Guideline promotes a fair process and helps protect the integrity of the decision-making process.

B. CI Arb AI Guideline

As AI continues to grow in the field of arbitration and its use becomes increasingly significant, the CI Arb policy team has drafted and issued in March 2025 the CI Arb AI Guidelines, which aim to guide the use of AI in a manner that allows arbitration practitioners and parties to use AI in a manner that they could benefit from its advantages while also taking into account certain strategies that help them mitigate its risks. The guideline draws upon current and anticipated developments in the industry, as well as procedural challenges associated with the use of AI. The guideline seeks

²⁷⁵ “SVAMC Publishes Guidelines on the Use of Artificial Intelligence in Arbitration – Silicon Valley Arbitration & Mediation Center.” 2024. April 30, 2024. <https://svamc.org/svamc-publishes-guidelines-on-the-use-of-artificial-intelligence-in-arbitration/>.

to ensure that AI use in arbitration enhances efficiency while safeguarding rights and the arbitral process. It clarifies that the guideline is not a user manual for AI tools but addresses AI's general impact and procedural issues. It emphasizes adherence to applicable laws and the necessity for periodic updates to the guidelines.

Part I outlines the benefits and risks of the use of AI in arbitration. Part II sets out general recommendations on the use of AI in arbitration. Part III addresses arbitrators' powers to give directions and make rulings on the use of AI by parties in arbitration. Part IV addresses the use of AI in arbitration by arbitrators. Appendix A includes a template Agreement on the Use of AI in Arbitration. Appendix B includes a template Procedural Order on the Use of AI in Arbitration.

The CIArb Guideline on the use of AI in Arbitration is structured to address the benefits, risks, and practical considerations of integrating AI into arbitration processes. Part I discusses the advantages and challenges of using AI in arbitration. It highlights the efficiency, accuracy, and accessibility AI brings to case management, evidence review, and language translation. Predictive tools can also enhance decision-making by offering insights into possible case outcomes. However, risks such as biases in AI algorithms, lack of transparency, over-reliance on automated systems, security vulnerabilities, and disparities in access to advanced AI tools present significant challenges. These risks necessitate careful consideration to ensure fairness and impartiality.

Part II sets out general recommendations for the responsible use of AI in arbitration. It emphasizes the need for transparency by requiring parties to disclose their use of AI tools and ensuring arbitrators are informed. The principles of fairness and accountability are stressed, with the ultimate decision-making authority always resting with human arbitrators. Security and confidentiality measures must be strictly adhered to, and all participants, including arbitrators, counsel, and parties, are encouraged to understand the capabilities and limitations of the AI tools they employ.

Part III focuses on arbitrators' powers to direct and rule on the use of AI by parties. Arbitrators are empowered to guide parties on acceptable AI tools and resolve disputes regarding their use, such as objections to AI-generated evidence. They must balance the potential benefits of AI with concerns about equality and fairness. To ensure compliance, arbitrators may issue procedural orders that establish clear standards for AI use during the arbitration process.

Part IV addresses the use of AI by arbitrators themselves. It outlines how arbitrators can leverage AI tools for case management, decision support, and administrative tasks to enhance efficiency. However, it underscores the need for human oversight to ensure impartiality and prevent undue reliance on AI outputs. Transparency is key, with arbitrators required to disclose their use of AI to maintain trust among parties. Continuous training and awareness are also recommended for arbitrators to stay informed about AI advancements and their implications.

The guideline concludes with two appendices that provide practical tools for implementing AI in arbitration. Appendix A offers a template agreement for parties to define the scope, security, and transparency of AI use in arbitration. It also includes mechanisms for addressing disputes related to AI. Appendix B contains a template procedural order to formalize AI's role in the arbitration process, establishing rules for its application while safeguarding fairness and equality. Together,

these templates aim to streamline AI integration while mitigating risks and ensuring ethical practice.

In other words, the CIArb AI Guideline outlines key principles and recommendations to guide the use of artificial intelligence in arbitration. It highlights the benefits of AI tools, such as legal research software and generative platforms, which can enhance the efficiency, consistency, and cost-effectiveness of arbitral proceedings. Broadly applicable to all participants, including arbitrators, parties, counsel, and experts, the Guideline serves as a supplemental reference for best practices without replacing institutional rules or national legislation. It emphasizes procedural transparency through disclosure requirements, particularly when AI tools might influence evidence, outcomes, or task delegation. Arbitrators are empowered to issue procedural directions, appoint AI-related experts, and maintain independent judgment, avoiding reliance on AI for decision-making. Parties retain autonomy to determine the extent and manner of AI use, within the bounds of legal or institutional constraints. The Guideline also identifies risks, such as data privacy issues, algorithmic bias, due process challenges, and reliance on opaque AI outputs that could undermine procedural fairness. To mitigate these risks, institutions and arbitrators are encouraged to integrate the Guideline into procedural protocols, while parties and counsel should establish internal AI policies and address transparency and disclosure early in the process. Furthermore, enforceability risks for arbitral awards may arise in jurisdictions where undisclosed or improper AI use conflicts with mandatory legal standards. The Guideline underscores the growing importance of training and capacity-building to help stakeholders navigate the procedural, legal, and ethical complexities of emerging AI technologies.

We can deduce that the CIArb AI Guideline, while it provides a strong framework for the use of AI in arbitration, the ultimate responsibility lies with arbitrators and parties to manage AI integration effectively. Transparency and fairness are paramount, requiring clear disclosures when AI tools influence evidence, decision-making, or procedural outcomes. Arbitrators must retain their independent judgment, ensuring that AI systems assist rather than replace human decision-making. Validating AI outputs and exercising discretion are essential to maintaining the integrity of the arbitral process. Similarly, parties must proactively tailor AI usage to the specifics of each case, agreeing on acceptable tools, safeguards, and protocols to mitigate risks such as data privacy breaches, algorithmic bias, and reliance on non-transparent “black box” systems. Compliance with applicable legal and ethical standards is critical, as improper or undisclosed use of AI can jeopardize the enforceability of arbitral awards or lead to procedural challenges. Additionally, all stakeholders bear a responsibility to engage in continuous learning to stay abreast of advancements in AI technology and its procedural, legal, and ethical implications. Ultimately, while guidelines like this offer direction, the successful adoption of AI in arbitration depends on the vigilance, accountability, and proactive efforts of arbitrators and parties to balance innovation with the core principles of justice and fairness.

C. Global Regulations & Guidelines

In addition to the SVAMC guidelines, which we have tackled above, some other global regulations and guidelines have tackled AI advancement in the legal field, including the international arbitration field. According to some legal practitioners, the way AI in the international arbitration field will be regulated cannot be predicted by practitioners or policymakers, yet insights can be drawn from the current legislation and frameworks.²⁷⁶ For example, in March 2023, the UK government released its AI Regulation White Paper, setting out a pro-innovative approach to regulating AI. The document addressed 5 main principles that regulators and policymakers should take into consideration and implement. These principles include (a) Safety, security, and robustness, (b) Appropriate transparency and explainability, (c) Fairness, (d) Accountability and governance, and (e) Contestability and redress.²⁷⁷ The White Paper outlines the framework to assist UK regulators in identifying and addressing the risks of AI tools, especially in the areas where these tools are being used or the areas that are starting to consider their implications. To do so, this paper has established a central function within the Department for Science, Innovation, and Technology (DSIT) to provide risk analysis, support skills development, and promote regulatory coherence and compliance in terms of AI. This central function will aim to identify the regulatory gaps in the currently existing regulations and frameworks in the areas where AI tools are being used to improve these regulations and tailor them to their specific needs. A question here would arise on how this is related to the international arbitration field. I could say that the relevance of the UK's AI regulatory framework to the field of international arbitration lies in how AI is significantly used within the arbitration field and process. Moreover, the principles that the White Paper has outlined are critical in ensuring that AI systems and tools that are being used in international arbitration are both ethically and legally compliant and maintain the main standards and values that arbitration is known for.

Moreover, another global initiative to have a coherent regulatory framework is the EU Artificial Intelligence Act (AI Act). This AI Act entered into force on the 1st of August 2024 and aims to foster responsible AI development and deployment in the EU.²⁷⁸ This AI Act also represents a significant step forward towards regulating AI within the EU. This Act aims to ensure that the new AI technological tools are developed and used in a way that is both ethical and legal.²⁷⁹ Among the critical areas that the AI Act tackled were law enforcement and assistance in the legal interpretation and application of the law. The Act has assessed and classified the AI technological tools and systems based on the risk they pose. With regards to law enforcement and the assistance in legal interpretation and application of the law, this Act has classified it within the high-risk category, confirming that these AI technological tools and systems used in these areas should be

²⁷⁶ Clyde. 2024. "AI and Arbitration: The Perspective from England & Wales." Clydeco.com. Clyde & Co LLP. January 25, 2024. <https://www.clydeco.com/en/insights/2024/01/ai-and-arbitration-the-perspective-from-england-wa#10>.

²⁷⁷ "Implementing the UK's AI Regulatory Principles: Initial Guidance for Regulators." GOV.UK. GOV.UK. June 14, 2024. <https://www.gov.uk/government/publications/implementing-the-uks-ai-regulatory-principles-initial-guidance-for-regulators/102aa401-60f6-46e8-95dc-b48150eba7dd>.

²⁷⁸ Directorate-General for Communication. 2024. "AI Act Enters into Force - European Commission." European Commission. August 1, 2024. https://commission.europa.eu/news/ai-act-enters-force-2024-08-01_en.

²⁷⁹ Ibid.

registered in the EU database and will be assessed before being put on the market for use and throughout their lifecycle giving the user the right to file complaints about these AI tools to the relevant national authority. In other words, the Act extends to the use of AI systems in both adjudication and alternative dispute resolution (ADR). In relation to ADR, it classifies certain uses of AI as potentially “high-risk” where the dispute resolution process gives rise to legal effects for the parties concerned. Although the Act does not explicitly differentiate among the various forms of ADR, its provisions on high-risk AI applications are particularly significant for arbitration, as arbitration is more likely than other ADR mechanisms to produce legally binding consequences.²⁸⁰

Moreover, this Act has also mentioned and tackled Generative AI like ChatGPT. According to the Act, these types of AI are not classified as high-risk AI tools, yet they are subject to the transparency requirements and the EU copyright and require (a) Disclosing that the content was generated by AI, (b) Designing the model to prevent it from generating illegal content, and (c) Publishing summaries of copyrighted data used for training.²⁸¹ Additionally, this Act stated that the high-risk, general-purpose AI models that have a potential risk like ChatGPT must undergo a comprehensive assessment, and any risks or incidents resulting from these AI tools should be directly reported to the EU Commission. The Act took a further step and mentioned that any images, audio, or videos generated by AI tools should be marked as AI-generated to notify users that such images are AI-generated when they encounter them.

Certain legal authors have already addressed the implications of the AI Act for specific branches of international arbitration, particularly international commercial arbitration. They have observed that the Act adopts an overly rigid and undifferentiated approach to arbitration, one that is difficult to reconcile with core arbitral features such as party autonomy, procedural flexibility, and self-regulation.²⁸² However, these concerns are not limited to commercial arbitration. Given that the AI Act does not expressly distinguish between the principal branches of international arbitration, its implications must also be considered in relation to interstate arbitration and international investment arbitration.

Furthermore, in addition to the above, the European Council issued a Framework Convention on Artificial Intelligence and Human Rights, Democracy, and the Rule of Law.²⁸³ This convention is the first international treaty in this area to have a legally binding force. Opened for signature on September 5, 2024, this convention seeks to ensure that all stages of the integration of AI systems and their development are aligned with human rights, democracy, and the rule of law.

The Framework of this convention builds on existing human rights, democracy standards, and the rule of law and aims to fill the gaps that may arise from the rapid technological advancement and the increased use of AI systems and tools. For the convention to remain relevant over time, it

²⁸⁰ Migliorini, Sara & Ilhão Moreira, João. (2025). Clashing Frameworks: the EU AI Act and Arbitration. *European Journal of Risk Regulation*. 17. 1-21. 10.1017/err.2025.10043.

²⁸¹ European Parliament. 2023. “EU AI Act: First Regulation on Artificial Intelligence.” European Parliament. June 8, 2023. <https://www.europarl.europa.eu/topics/en/article/20230601STO93804/eu-ai-act-first-regulation-on-artificial-intelligence>.

²⁸² Migliorini, Sara & Ilhão Moreira, João. (2025). Clashing Frameworks: the EU AI Act and Arbitration. *European Journal of Risk Regulation*. 17. 1-21. 10.1017/err.2025.10043.

²⁸³ “Council of Europe Framework Convention on Artificial Intelligence and Human Rights, Democracy and the Rule of Law.” n.d. <https://rm.coe.int/1680afae3c>.

avoided regulating technology and instead regulated human rights, democracy, and the rule of law.²⁸⁴

But who is entitled by the framework of this convention? It should be noted that the framework of this convention addresses the use of AI tools and systems in public authorities, including private entities acting on their behalf, as well as private sector actors.

The framework of this convention provides parties with two options to adhere to its principles and obligations when regulating the private sector. Parties can either be directly bound by the relevant provisions of the convention or take alternative measures to comply with its provisions while ensuring that international obligations of human rights, democracy, and the rule of law are being respected. We should also note that parties are not obliged to apply the convention provisions and terms to national security protection activities, yet they have to ensure that these activities adhere to international law. The framework of this convention also does not cover national defense matters or research unless the AI systems could potentially infringe on human rights, democracy, and the rule of law.²⁸⁵ In other words, the main aim of the convention is to regulate the activities of both the private and public sectors throughout the lifecycle of AI systems and tools as per the Council of Europe's legal standards on human rights, democracy, and the rule of law.²⁸⁶

Furthermore, it is worth noting that while some states and arbitral institutions have already begun to regulate or provide guidance on the use of artificial intelligence in arbitration, others have not yet done so. At present, Lebanon does not appear to have adopted arbitration-specific legislation or institutional rules expressly governing the use of AI in arbitral proceedings. Arbitration in Lebanon remains primarily governed by the Lebanese Code of Civil Procedure, whose provisions predate the emergence of AI and do not specifically address its use in arbitration. Likewise, the Lebanese Arbitration and Mediation Center appears to operate under the general Lebanese arbitration framework without publicly available AI-specific arbitration rules. Hungary, however, now presents a different picture. Although the Hungarian Arbitration Act does not appear to contain express provisions on the use of AI in arbitral proceedings, the Permanent Arbitration Court attached to the Hungarian Chamber of Commerce and Industry has adopted AI Guidelines, effective from 1 January 2026, which provide non-binding practical guidance on the use of AI in arbitration proceedings.²⁸⁷ In addition, Hungary, as a Member State of the European Union, is subject to the broader regulatory framework of the AI Act. Accordingly, while neither Lebanon nor Hungary appears to have enacted binding arbitration-statute-level AI regulation, Hungary has already developed institutional soft-law guidance in this area

Further to the above, how can existing arbitral rules be applied to the use of AI?

²⁸⁴ "The Framework Convention on Artificial Intelligence - Artificial Intelligence - Wwww.coe.int." Artificial Intelligence. <https://www.coe.int/en/web/artificial-intelligence/the-framework-convention-on-artificial-intelligence>.

²⁸⁵ Ibid

²⁸⁶ European External Action Service (EEAS). n.d. "Text of First Legally Binding Global Instrument to Address Risks Posed by Artificial Intelligence Finalised by the Council of Europe." https://www.eeas.europa.eu/delegations/council-europe/text-first-legally-binding-global-instrument-address-risks-posed-artificial-intelligence-finalised_en?s=51

²⁸⁷ Permanent Arbitration Court attached to the Hungarian Chamber of Commerce and Industry, *Guidelines on the Use of Artificial Intelligence in Arbitration Proceedings* (adopted 16 December 2025, effective 1 January 2026).

Arbitral tribunals hold a wide range of discretionary authority to manage the arbitration process. This authority is derived from the national laws that govern the arbitration process as well as the procedural rules. An example is Article 17 (1) of the UNCITRAL Arbitration Rules. This article stated that “the arbitral tribunal may conduct the arbitration in such manner as it considers appropriate, provided that the parties are treated with equality and that at an appropriate stage of the proceedings, each party is given a reasonable opportunity of presenting its case. The arbitral tribunal, in exercising its discretion, shall conduct the proceedings to avoid unnecessary delay and expense and to provide a fair and efficient process for resolving the parties’ dispute.”²⁸⁸

We can see from the above article that a wide authority has been provided to the arbitral tribunal to conduct the arbitration process in a manner that is considered appropriate while ensuring that the rights of the parties are protected. It also added that the proceedings should be conducted in a way that avoids any unnecessary delay and expenses and provides a fair trial. We can see this discretion is wide and general and could include the use of technological tools and AI. However, this article did not mention or include when the use of technological tools, including AI, should be disclosed, nor did it include the necessary framework to help those involved in the arbitration process understand the use of AI, nor how AI can be managed throughout the arbitration process.²⁸⁹

We can deduce from the current applicable regulations and, as mentioned by legal experts, that the guidance issued by arbitral institutions and organizations, the SVAMC is the only one to have published draft guidelines on the use of AI within the arbitration process and field. This guideline, as mentioned above, emphasizes important principles such as protecting the confidentiality of the parties involved in the arbitration process, using AI tools or systems, and highlighting that the main principle is that the decision-making process in arbitration cannot be delegated to AI. These guidelines are expected to serve as a reference for other arbitral institutions when creating their recommendations on the use of AI.²⁹⁰

In this regard, I have asked the arbitrators interviewed, “Do you think arbitration institutions and organizations are efficiently working towards regulating the use of AI in arbitration? Are the current regulations in place sufficient?”

According to *Mihaela Apostol*²⁹¹ “There have been some good steps in this direction, the AAA-ICDR Principles Supporting the Use of AI in Alternative Dispute Resolution (2023) and the SCC Guide to Using Artificial Intelligence in Arbitration (2024). There are also other institutions

²⁸⁸ “UNCITRAL Arbitration Rules (2021) UNCITRAL Expedited Arbitration Rules UNCITRAL Rules on Transparency in Treaty-Based Investor-State Arbitration UNITED NATIONS UNCITRAL UNITED NATIONS COMMISSION ON INTERNATIONAL TRADE LAW.” n.d. https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/21-07996_expedited-arbitration-e-book.pdf.

²⁸⁹ “New Frontiers: Regulating Artificial Intelligence in International Arbitration.” 2024. Nortonrosefulbright.com. 2024. https://www.nortonrosefulbright.com/en/knowledge/publications/3cb82b55/new-frontiers-regulating-artificial-intelligence-in-international-arbitration?utm_source=chatgpt.com.

²⁹⁰ Clyde. 2024. “AI and Arbitration: The Perspective from England & Wales.” Clydeco.com. Clyde & Co LLP. January 25, 2024. <https://www.clydeco.com/en/insights/2024/01/ai-and-arbitration-the-perspective-from-england-wa>.

²⁹¹ Mihaela Apostol is an independent counsel and arbitrator based in London. Mihaela is a civil and common law qualified lawyer with ten years of experience in international arbitration having worked as counsel, tribunal secretary and arbitrator. She is an Avocat of the Bar of Bucharest, Romania and a Solicitor of the Supreme Court of England and Wales.

exploring this issue further, trying to assist with guidelines and practice notes” (Interview, January 03, 2025).²⁹²

According to *Sarah Reynolds*²⁹³ “That’s a great question. I would say that some arbitration institutions are going out of their way to start dealing with AI, while others are kind of waiting in the wings to see how all this will shake out. Again, part of our goal at the Silicon Valley Arbitration & Mediation Center in introducing the guidelines was to address the lack of clear rules on when disclosure should be made or whether arbitrators need to disclose something.

Most jurisdictions have a typical rule stating that arbitrators have a duty of competence, but I do think we probably need some clear guidance on the use of AI in ADR and arbitration in general. The goal of developing the guidelines was really to trigger this conversation.

We saw that in arbitration, there are differences in what jurisdictions will allow. A classic example is that in the UK, you cannot prepare witnesses, while in the US, you can. This creates imbalances and benefits, and we do not want a similar inequitable situation to arise with AI” (Interview, January 10, 2025).²⁹⁴

According to *Dragana Nikolić*²⁹⁵ “I believe that the leading arbitration institutions and organizations are already considering how to incorporate AI in their work and that they will adapt their regulations accordingly in the near future” (Interview, January 19, 2025).²⁹⁶

Additionally, *Raymond (Rony) Joseph Araygi*²⁹⁷ stated, “Current Efforts: Institutions like the ICC and SIAC have started discussing AI but lack concrete regulations. From my experience, a lot of arbitration rules do not explicitly address AI’s role, leading to legal uncertainties regarding its use and regulation. Regulatory Needs: Clear guidelines on AI usage, bias mitigation, and confidentiality protection are necessary” (Interview, February 14, 2025).²⁹⁸

To conclude, a general comparison can be drawn between the different ways in which jurisdictions and institutions are approaching the regulation of AI. Some systems seem to move toward more structured and regulatory models, while others prefer to rely on broader principles and flexible

²⁹² Mihaela Apostol, Interview by Layan Al Fatayri, Virtual, January 03, 2025.

²⁹³ Sarah Reynolds is an independent arbitrator based in the United States. She is cross licensed in the US, U.K. and Ireland. Sarah focuses on cross-border and domestic commercial disputes and is a former partner in the international arbitration practice of Mayer Brown LLP.

²⁹⁴ Sarah Reynolds, Interview by Layan Al Fatayri, Virtual, January 10, 2025.

²⁹⁵ Dragana Nikolić is an independent attorney-at-law admitted to the bar in Serbia, cooperating with Queritius as Counsel. She specializes in international commercial and investor-state arbitration, managing complex cross-border cases before leading arbitration institutions, and serves as the regional representative for Young ICCA in Europe. Additionally, Dragana holds a bachelor’s degree from the University of Belgrade Faculty of Law and master’s degrees in international law from the University of Cambridge and the University of Belgrade.

²⁹⁶ Dragana Nikolić, Interview by Layan Al Fatayri, Virtual, January 19, 2025.

²⁹⁷ Raymond (Rony) Joseph ARAYGI holds a Lebanese Master’s in Law and a Diploma of Higher Studies (DES) in Private Law from Saint Joseph University—Beirut. Admitted to the Beirut Bar in 1989, Rony is the Managing Partner of ARAYGI & MAALOUY LAW FIRM, established in 1998. Since then, he has been involved in numerous commercial, corporate, fiscal, taxation, and criminal matters. Rony has also participated in international and local arbitrations, both ad hoc and institutional, including under the Rules of the ICC International Court of Arbitration, the Dubai International Arbitration Center (DIAC), and the Lebanese Arbitration and Mediation Center (LAMC), handling a variety of matters such as post-M&A, distribution, construction, joint ventures, and intellectual property. Rony served as Lebanon’s Minister of Culture from February 2014 to December 2016 and received the French civilian distinction of “Commandeur des Arts et des Lettres” in 2016.

²⁹⁸ Raymond (Rony) Joseph ARAYGI, Interview by Layan Al Fatayri, Virtual, February 14, 2025.

guidance. Arbitral institutions have so far tended to respond through guidelines rather than formal rules. These differences reflect varying priorities, particularly between the need to address the risks associated with AI and the desire to preserve flexibility and innovation. In the context of international arbitration, this variety of approaches may lead to a degree of inconsistency, especially in cross-border disputes where parties may have different expectations as to how AI should be used.

This raises a broader question: in light of these differing approaches, what kind of regulatory approach is best suited to govern the use of AI in international arbitration, while still maintaining both consistency and flexibility?

IV. Normative Evaluation and Future Regulatory Framework

Building on the regulatory developments discussed above, including the SVAMC Guidelines, the CIArb AI Guideline, and broader initiatives such as the EU Artificial Intelligence Act, it becomes evident that the current regulatory landscape governing the use of artificial intelligence in international arbitration remains fragmented and largely non-binding. While these frameworks reflect important progress and show an increasing awareness of the opportunities and risks associated with AI, they do not fully resolve the deeper concerns relating to fairness, legitimacy, transparency, accountability, and procedural integrity within arbitral proceedings. A closer examination of these frameworks suggests that, despite their growing sophistication, they remain insufficient to comprehensively regulate the use of AI in arbitration. Much of the existing regulation takes the form of soft law instruments, such as institutional guidelines and best practice recommendations, which do not have binding force and depend largely on voluntary compliance. As a result, their application differs across jurisdictions and arbitral institutions, leading to inconsistency in practice. At the same time, broader legislative initiatives, including the EU Artificial Intelligence Act, are not specifically designed for the particular features of international arbitration, such as party autonomy, procedural flexibility, confidentiality, and the transnational nature of disputes. This creates a gap between the growing practical use of AI in arbitration and the regulatory structures available to govern that use.

This conclusion is also supported by the empirical findings of this thesis. The interviews conducted with arbitration practitioners show a broadly shared view that, although meaningful steps have been taken, current regulatory efforts remain uneven and incomplete. Some institutions are actively engaging with AI and attempting to develop guidelines, while others are proceeding more cautiously or waiting for clearer developments. This has produced a landscape in which regulatory responses are emerging, but not in a consistent or coordinated way. Concerns were also raised in the interviews regarding the absence of clear rules on issues such as disclosure, confidentiality, bias, and the reliability of AI-generated material. Taken together, these findings confirm that the present framework remains transitional and that existing efforts, while valuable, are not yet sufficient.

It is shown from this analysis that the need for a hybrid approach emerges. The reasoning is straightforward. First, the increasing use of AI in arbitration, together with the risks identified throughout this chapter, shows that some form of stronger regulation is necessary. Questions of transparency, fairness, confidentiality, and due process are too important to be left entirely to informal practice. Second, the current reliance on soft law alone is not enough. Although guidelines and recommendations are useful, they cannot by themselves ensure consistency, accountability, or minimum procedural safeguards. Third, however, a single centralized and rigid global binding regime would also be problematic. International arbitration is not a uniform national court system; it is decentralized, consent-based, and shaped by different legal traditions, institutions, and procedural cultures. A one-size-fits-all binding model would therefore risk undermining the very flexibility that makes arbitration attractive. For these reasons, in my opinion, neither a purely soft-law model nor a fully centralized binding regime offers a satisfactory solution.

Therefore, this thesis proposes a hybrid regulatory approach to AI in international arbitration. In this context, “hybrid” means combining non-binding international guidance with targeted binding rules at the national or institutional level. The soft law component remains important because it allows international arbitration to adapt to technological change, encourages innovation, and supports the gradual development of consensus across jurisdictions. At the same time, binding safeguards are necessary in certain core areas where legal certainty and procedural legitimacy cannot depend solely on voluntary compliance. These areas may include disclosure obligations concerning the use of AI, confidentiality and data protection requirements, rules governing the use of AI-generated evidence or submissions, and the final decision-making authority. In this way, the hybrid approach reflects the dual reality of arbitration: it must remain flexible, but it cannot remain unregulated. Importantly, the binding dimension of this approach should not take the form of a single global code imposed uniformly on all arbitral settings. Rather, binding rules should be developed at the level of domestic legislation, arbitral institutions, or applicable procedural frameworks, where they can be adapted to different legal systems and practical contexts. At the same time, this diversity should not lead to complete fragmentation. A degree of international consistency remains necessary, particularly in an area such as international arbitration, where cross-border legitimacy and predictability are essential. The objective, therefore, is not strict uniformity, but harmonization: different jurisdictions and institutions may adopt different formulations, but they should do so around a common set of basic principles.

Within this framework, international organizations should play a central role in standard-setting and coordination. Bodies such as UNCITRAL and ICSID are particularly well placed to contribute to the development of coherent principles that can guide states and institutions in designing their own rules. Their role should not be to function as centralized regulators of AI in arbitration, but rather to facilitate convergence through model rules, procedural guidance, and best-practice standards. In this way, they can help reduce inconsistency without eliminating the flexibility and diversity that are inherent in international arbitration. Arbitral institutions also have an essential role to play, since they are often the first actors capable of translating general principles into operational procedural rules and practice guidelines.

A particularly sensitive issue arises when considering the possible use of AI in decision-making based on *ex aequo et bono*. Unlike decisions grounded strictly in positive legal rules, *ex aequo et bono* determinations require arbitrators to exercise judgment on the basis of fairness, equity, and broader considerations of justice. This type of reasoning is deeply contextual and often involves moral, social, and value-based assessments. It is therefore not simply a matter of identifying legal patterns or predicting likely outcomes on the basis of past data. While AI tools may help organize information or identify comparable considerations, their capacity to engage in genuinely equitable reasoning remains fundamentally limited.

For that reason, this thesis takes the view that AI may assist but should not replace the arbitrator in cases involving *ex aequo et bono* decision-making. In such cases especially, the legitimacy of the award depends on the exercise of human judgment. Allowing AI to independently determine outcomes in this context would raise serious concerns regarding accountability, fairness, and the preservation of the human element in arbitration. The final decision must therefore remain with the arbitrator, even where AI is used as a supporting tool.

In conclusion, the future regulatory framework for AI in international arbitration should not be framed as a choice between complete regulatory freedom and rigid universal control. The real challenge is to design a model that preserves the flexibility of arbitration while ensuring adequate safeguards for fairness, transparency, and legitimacy. Based on the analysis in this chapter, a hybrid approach offers the most convincing path forward. It responds to the insufficiency of soft law alone, avoids the drawbacks of a rigid global regime, and creates space for both contextual adaptation and international consistency. Through coordinated efforts by international organizations, arbitral institutions, and domestic regulators, it is possible to develop a framework that supports technological innovation without compromising the fundamental principles on which international arbitration rests.

V. Conclusion

As we look toward the future of ADR in the context of international arbitration, mainly inter-state, international investment, and international commercial arbitration, it is clear that AI plays and will play a significant transformative role. In this chapter, we have examined the promising role of AI in the arbitration process. As we discussed, the application and integration of AI into the arbitration field are already underway, with a variety of AI tools being used to enhance the efficiency and accuracy of the arbitration process. From the current application and use of AI tools, such as AI for document review and predictive analysis, to even more sophisticated tools to be developed in the next decades. AI is poised to extensively transform the arbitration process. Equally important is the evolving regulatory framework that governs the use of AI in international arbitration. As outlined in the SVAMC guidelines, there is a global recognition of the need to have globalized and standardized regulations and frameworks to ensure the application of AI tools is conducted in a fair, ethical, and transparent manner. Global and standardized regulations will be essential and crucial to ensure consistency and fairness in the use of AI tools.

Looking ahead and based on the above, it is clear that the intersection of AI and international arbitration requires an ongoing collaboration between legal practitioners, legal professionals, technologists, and policymakers. As we move into the next decades and further development of AI within the field, the development of regulatory frameworks that keep pace with the technological advancements will be required to maximize the benefits of AI, reduce its drawbacks, and make it more fit to be used within the arbitration process. With the right regulations and continued technological advancements, AI will continue to have the potential to revolutionize ADR in general and the international arbitration field in particular. Therefore, another question that arises is whether there is a possibility for AI arbitrators to replace human arbitrators, which will be tackled in the coming chapter.

CHAPTER 6

Possibility for AI Arbitrators To Replace Human Arbitrators: Legal and Social Perspective ²⁹⁹

²⁹⁹ This chapter is currently in the process of being published by the author in the International Review of Law (Qatar University).

I. Introduction

Artificial Intelligence (AI) has several definitions due to its developing nature. AI as defined by Professor John McCarthy, the computer scientist who defined AI tools in 1955, “the science and engineering of making intelligent machines”. Also, AI, as defined by the EU Artificial Intelligence Act, proposed on 21 April 2021 and adopted in 2024 (“AI Act”), refers to systems that, for a given set of objectives, generate outputs such as content, predictions, recommendations, or decisions influencing the environments they interact with. Over the last decades, there have been phenomenal advancements in the use of AI in the legal field, especially in International Arbitration. The inclusion of AI tools in Arbitration is increasing and taking several forms and tasks, especially in today’s modern society, which has been accelerated by the COVID-19 pandemic. There are AI systems, for example, used to analyze arbitration clauses along with systems used to draft an arbitration clause. The online “Clause-Builder” tool from the American Arbitration Association (AAA), a known AI tool, was created to help draft arbitration provisions based on the facts of disputes as well as the user preferences for the arbitration agreement’s components. Moreover, there are AI tools used for choosing suitable experts, arbitrators, and counsel, a best-known example is Arbitrator Intelligence, which provides AI reports on arbitrators’ track records enabling parties and counsels to make more predictable arbitrator selections.

Time has shown, especially after the COVID-19 pandemic, that no profession is immune to AI taking control, not even an arbitrator role, and profession. By enabling computer programs to process material similarly to arbitrators, AI poses a challenge to the international arbitration field. This development of technology and the rapid use of new technological tools have led to several questions in International Arbitration. One of the most challenging questions is whether Artificial Intelligence Arbitrators (defined as AI Arbitrators) can take the role of human arbitrators or are they just used to support arbitrators and increase efficiency? The subject of whether AI arbitrators can take the place of human arbitrators is complex. In reality, it pertains to a larger debate over whether AI can serve as a decision-making authority.

Scholars such as Marrow, Karol, and Kuyan framed the essential debate early by asking whether computers could truly serve as arbitrators, a question they summarized as ‘Are we there yet?’. Their work illustrates the long-standing uncertainty about when, or if, AI can function as a decision-maker in arbitration.³⁰⁰ Similarly, the scholar Colorado emphasizes that AI’s influence is not limited to efficiency gains; it could reshape the very structure of international arbitration in the long run, raising fundamental questions about legitimacy and trust.³⁰¹

The usage of AI technological tools in International Arbitration and its impact on the future of

³⁰⁰ Paul Bennett Marrow, Mansi Karol and Steven Kuyan, ‘Artificial Intelligence and Arbitration: The Computer as an Arbitrator—Are We There Yet?’ (2020) 74(4) *Dispute Resolution Journal* <<https://www.marowlaw.com/wp-content/uploads/2021/02/Marrow-et-al.-AI-and-Arbitration.pdf>> accessed 24 January 2024.

³⁰¹ Orlando Federico Cabrera Colorado, ‘The Future of International Arbitration in the Age of Artificial Intelligence’ (2023) 40(3) *Journal of International Arbitration* 301 <<https://kluwerlawonline.com/JournalArticle/Journal+of+International+Arbitration/40.3/JOIA2023014>> accessed 24 January 2024.

international arbitration make this question crucial, even though there isn't yet a system created for an AI arbitrator to replace human arbitrators and serve as the adjudicatory authority. As a result of this ongoing debate, it is necessary to answer this question by analyzing the increased use of AI in arbitration along with the legal documents and instruments to determine what criteria arbitrators must meet. In other words, to analyze and assess the applicable instruments, conventions, regulations, and public policies on the criteria needed to be met by an arbitrator and the recognition and validity of the arbitral awards issued by the arbitrator from a legal-normative perspective.

This will include the analysis and assessment of several legislation, conventions, and instruments used by arbitration organizations, including the UNCITRAL Model Law on International Commercial Arbitration and the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards, along with the European Artificial Intelligence Act, enacted in 2024.

Moreover, this study will also follow a social-empirical perspective, by analyzing the available statistical studies along with analyzing a survey conducted by the author to conclude whether AI tools are used in a way that will allow them to take the role of human arbitrators or is just used to support arbitrators and increase efficiency. In other words, to conclude whether AI Arbitrators can replace human arbitrators from a legal and social perspective.

II. Methodology

This study adopts a mixed-methods approach, integrating normative legal analysis with empirical data obtained from a targeted survey. The survey was designed for arbitration practitioners from multiple jurisdictions, identified through sampling based on professional networks, conference participation, and membership in recognized arbitration bodies. A total of 29 practitioners provided complete responses and took part in the study, representing diverse legal systems and professional roles. The analysis focused on six main survey questions, exploring the frequency of AI tool usage, the types of AI applications employed, the perceived advantages of these tools, and opinions on whether AI could replace human arbitrators. The survey questions analyzed in this study are available in the Data and Information section of this article. Quantitative data were analyzed using descriptive statistics, while qualitative responses were thematically coded to reveal common patterns and points of divergence. Ethical standards were strictly observed, with all participants providing informed consent, responses anonymized for confidentiality, and no personally identifying information collected or stored.

III. The Framework of the Study

A. The Legal Context

The significant benefit of international arbitration is the party autonomy concept. Party autonomy in international arbitration, across Interstate, International Investment, and International

Commercial Arbitration, enables the parties' option to decide on several parts of the arbitral process, one of which is the selection of arbitrators. This concept is what makes arbitration unique and different than national courts, since in arbitration, parties may choose the arbitrators to hear their cases based on their qualifications, experience, and areas of practice.

However, the main question is whether this autonomy extends to allow parties to choose AI arbitrators instead of human arbitrators. In other words, we should check if AI arbitrators are permitted to be appointed as arbitrators. This ongoing question requires the analysis of the relevant applicable regulations and laws at both a national and international level.

At the national level³⁰², there are several countries for example the Scottish Arbitration Rules (Rule 3)³⁰³, and the Swedish Arbitration Act (Section 7)³⁰⁴, that expressly provide that arbitrators must be natural persons. In addition to that, the French Code of Civil Procedure states that arbitrators should be natural persons capable of carrying out responsibilities.³⁰⁵

Similarly, some national regulations refer to arbitrators using gender pronouns. A known example is the United States Federal Act (Section 5).³⁰⁶ From such use of pronouns, we can deduce that the arbitrators they are referring to are natural persons although it is not stated clearly that AI arbitrators can't be appointed as arbitrators, giving the possibility for AI arbitrators to take the role of human arbitrators unless new regulations are issued in this regard.

In the Arab world, arbitration laws also reflect a strong preference for human arbitrators. For instance, in the United Arab Emirates (UAE), while the Federal Arbitration Law No. 6 of 2018 concerning arbitration was enacted to align domestic arbitration with international best practices, it remains firmly grounded in the notion that arbitrators must be natural persons, as mentioned in Article 10 (1)(a). Moreover, Article 1 defines an 'arbitral tribunal' as a sole arbitrator or a panel of arbitrators, with no recognition of the possibility that a machine or algorithm could fulfill this role. Further, Article 10 (2), which governs the appointment of arbitrators, uses terminology such as 'nationality,' a concept that can only apply to natural persons, thereby excluding AI systems. The requirements for issuing arbitral awards also reinforce this interpretation: Article 41 mandates that awards must be in writing, signed by the members of the arbitral tribunal, and supported by reasons. These obligations presuppose human reasoning and signature, which AI systems currently cannot provide under UAE law.³⁰⁷ In the same instance, in Lebanon, the legal framework governing arbitration remains ill-equipped to accommodate electronic or AI processes. Under domestic arbitration rules, Lebanese Code of Civil Procedure (LCCP) (LCCP, arts. 762–808), arbitration clauses must be in writing and signed to be valid, which excludes electronically concluded or AI-generated agreements from recognition. Even arbitral awards require production in hard copy, further restricting reliance on digital or AI-based procedures. While the LCCP adopts

³⁰² Gülüm Bayraktaroğlu-Özçelik and Ş Barış Özçelik, 'Use of AI-Based Technologies in International Commercial Arbitration' (2021) 12(1) *European Journal of Law and Technology* <<https://ejlt.org/index.php/ejlt/article/view/814>> accessed 30 January 2024.

³⁰³ Arbitration (Scotland) Act 2010 asp 1, sch 1 r 3.

³⁰⁴ Swedish Arbitration Act (SFS 1999:116) s 7

³⁰⁵ Sandli Srivastava, *Implementation of Artificial Intelligence in Arbitration* (Master's thesis, University of Oslo, 2021)

³⁰⁶ 9 USC § 5

³⁰⁷ Inas Alkhaldi, 'Artificial Intelligence in the UAE Arbitration Law: Fact or Fiction?' (2025) 17 *Pakistan Journal of Criminology* 55, 63 <https://www.pjcriminology.com/wp-content/uploads/2025/01/4_Artificial-Intelligence-in-the-UAE-Arbitration-Law-Fact-or-Fiction.pdf> accessed 30 January 2024.

a more flexible stance toward international arbitration (arts. 809–821) by not expressly requiring written agreements, recognition and enforcement of international awards in Lebanon still depends on submission of original or certified copies of both the arbitration agreement and award. This insistence on material documentation, coupled with a conservative business culture favoring face-to-face dealings, creates significant obstacles to the integration of AI technologies into arbitration practice.³⁰⁸ On the other hand, Qatar has taken notable institutional steps to modernize its arbitration framework and integrate digital technologies that pave the way for artificial intelligence in dispute resolution. A key development was the 2024 Memorandum of Understanding between the Qatar International Court and Dispute Resolution Centre (QICDRC) and Jus Mundi, an AI-powered arbitration knowledge platform. This cooperation enhances access to case law, arbitral awards, and legal materials through AI-driven search and summarization.³⁰⁹ Complementing this, the Qatar International Centre for Conciliation and Arbitration (QICCA) introduced its revised arbitration rules in 2024, which came into effect in early 2025. These rules expressly provide for electronic communication, digital filings, and the electronic signature of awards under defined safeguards. The modernization of QICCA's rules, combined with electronic services such as online claim submissions and case management, creates a legal infrastructure conducive to the deployment of AI tools for tasks such as document review, predictive analytics, or drafting assistance.³¹⁰

Furthermore, concerning laws and regulations on an international level, we refer to the New York Convention provisions related to arbitrators. The phrase "arbitral award" is used in the New York Convention under Article I (2)³¹¹ to refer to decisions made by permanent arbitral bodies as well as decisions made by arbitrators selected to handle specific disputes. Due to this, we can deduce that the New York Convention empowers both natural legal persons to issue international arbitral awards that are recognized and enforceable.

Moreover, most legislation, along with the New York Convention needs the rendered arbitral award to be issued in a written form and have the signature of the concerned arbitrators. Article IV(1)(a) of the New York Convention mandates submission of the 'duly authenticated original award or a duly certified copy thereof', signaling that signed awards are presumed essential for enforceability.³¹² Felipe Volio Soley has pointed out that although electronic signatures are now common, e-signatures were not envisioned in the Convention and may still raise formality concerns in some jurisdictions.³¹³ Meanwhile, the LCIA Rules 2020 (Art. 26.2) explicitly permit electronic signatures by arbitrators—provided parties or the tribunal do not object—but this

308 Mira Fayad and Habib Kazzi, 'Electronic Arbitration in Lebanon – Overview and Trends' (2015) 11(7) *European Scientific Journal* 39 <<https://ejournal.org/index.php/esj/article/view/5304>> accessed 06 September 2025.

309 Qatar News Agency, 'Qatar International Court, Jus Mundi Sign Memorandum of Understanding' (27 February 2024) <<https://qna.org.qa/en/news/news-details?id=0061-qatar-international-court%2C-jus-mundi-sign-memorandum-of-understanding&date=27/02/2024>> accessed 06 September 2025.

310 Pinsent Masons, 'New Digital Services and Legal Developments Boost International Arbitration Usage in Qatar' (Out-Law, 19 March 2025) <<https://www.pinsentmasons.com/out-law/analysis/digital-services-legal-developments-boost-international-arbitration-usage>> accessed 06 September 2025.

311 Convention on the Recognition and Enforcement of Foreign Arbitral Awards (New York Convention) (adopted 10 June 1958, entered into force 7 June 1959) 330 UNTS 3 art I(2).

312 Felipe Volio Soley, 'Signing the Arbitral Award in Wet Ink: Resistance to Technological Change or a Reasonable Precaution?' (Kluwer Arbitration Blog, 6 November 2020) <<https://arbitrationblog.kluwerarbitration.com/2020/11/06/signing-the-arbitral-award-in-wet-ink-resistance-to-technological-change-or-a-reasonable-precaution/>> accessed 30 January 2024.

313 Id.

applies solely to human arbitrators.³¹⁴ Finally, a recent commentary raises the question of whether an AI-only award, lacking any human authentication, would meet the enforceability and public-policy thresholds under the Convention.

On the other hand, this clause is not included in the UNCITRAL Model Law. However, Article 11(1)³¹⁵ of the Model Law provides that no person can be prohibited from serving as an arbitrator due to his or her nationality. We can deduce that this provision refers to human arbitrators.

Moreover, and in a similar context, nationality and the arbitrators' domicile are included in the ICC Arbitration Rules³¹⁶ under Article 13(1)³¹⁷, (5)³¹⁸, and concerning Article 6.1³¹⁹ of the Arbitration Rules of the London Court of International Arbitration (LCIA)³²⁰, there are specific guidelines on the nationality of the arbitrators that consider dual nationality.

Yet, on the other hand, we should note that despite the analysis made above, the New York Convention states nothing regarding whether AI arbitrators can function as arbitrators and replace human arbitrators. Some believe that the convention was approved in 1958, and it is evident that the idea of choosing AI arbitrators was not taken into consideration at that time. Also, others believe that such omission might mean that the Convention does not contain any limitations on awards issued by AI arbitrators and therefore there are no limitations on the validity and enforcement of awards by AI arbitrators or even on the ability for AI arbitrators to replace human arbitrators.³²¹ Legal experts believe that this interpretation can be made similar to the interpretation that was made in 2006 when UNCITRAL expanded the scope of Art. II(2) of the Convention to include arbitration agreements reached via email or other instantaneous modes of communication.³²²

Moreover, as for the legal requirement relating to the legal personality of AI systems and tools, it should be referred to and noted that although the European Parliament has adopted in 2017 the Resolution on Civil Law Rules on Robotics³²³ however, these conversations are still ongoing and have not yet been the subject of legislation, especially in the field of arbitration.

In addition to that, reference to the EU Artificial Intelligence Act, enacted in 2024 (the “AI Act”), published on 21 April 2021 that set out regulations and rules on artificial intelligence should be made. This AI Act followed the publication of the European Strategy on Artificial Intelligence

314 Eliana Tornese, ‘LCIA Arbitration—What You Need to Know’ (UNCITRAL Colloquium, Panel 11, 1 October 2024) <https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/eliana_tornese.pdf> accessed 13 December 2024.

315 UNCITRAL Model Law on International Commercial Arbitration (1985) ch III art 11(1) UN Doc A/40/17, annex I <https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/19-09955_e_ebook.pdf> accessed 30 January 2024.

316 David Salton, ‘Recent Trends in International Arbitration and 2021 International Rule Changes’ (2021) 17 Construction Law Journal 81.

317 International Chamber of Commerce, ICC Rules of Arbitration (2021) art 13(1) <<https://iccwbo.org/dispute-resolution-services/arbitration/rules-of-arbitration/>> accessed 30 January 2024.

318 International Chamber of Commerce, ICC Rules of Arbitration (2021) art 13(5) <<https://iccwbo.org/dispute-resolution-services/arbitration/rules-of-arbitration/>> accessed 30 January 2024.

319 London Court of International Arbitration, LCIA Arbitration Rules (2020) art 6.1 <https://www.lcia.org/Dispute_Resolution_Services/lcia-arbitration-rules-2020.aspx> accessed 30 January 2024.

320 Maxi Scherer, Lisa Richman and Remy Gerbay, *Arbitrating Under the 2020 LCIA Rules: A User’s Guide* (Kluwer Law International 2021).

321 Gülüm Bayraktaroğlu-Özçelik and Ş Barış Özçelik, ‘Use of AI-Based Technologies in International Commercial Arbitration’ (2021) 12(1) European Journal of Law and Technology <<https://ejlt.org/index.php/ejlt/article/view/814>> accessed 30 January 2025.

322 Horst Eidenmueller and Faidon Varesis, ‘What Is an Arbitration? Artificial Intelligence and the Vanishing Human Arbitrator’ (SSRN, 17 June 2020) <<https://ssrn.com/abstract=3629145>> accessed 30 January 2025.

323 Nikos Th Nikolinos, ‘Major EU Policy Developments on Liability for Artificial Intelligence, Robotics, and Emerging Digital Technologies: 2015 to 2018’ in *Adapting the EU Civil Liability Regime to the Digital Age: Artificial Intelligence, Robotics, and Other Emerging Technologies* (Springer 2024)

in 2018, and the publication of the Guidelines for Trustworthy AI in 2019 by the High-Level Expert Group on Artificial Intelligence, established by the European Commission to make sure AI is created and deployed in a manner that is secure, transparent, upholds ethical standards, encourages innovation, and boosts the economy.

This AI Act, besides defining artificial intelligence and categorizing AI systems, this AI act has addressed in Title III the high-risk AI systems. The AI Act has stated the types of high-risk AI systems in Annex 3, some of these high-risk systems are the AI systems used for law enforcement and for assisting judicial authorities in researching and interpreting facts and the law and in applying the law to a concrete set of facts³²⁴ which the use of such systems in the legal field is subject to strict requirements.

We can summarize that; the AI Act includes provisions related to the use of AI systems in law. The AI Act acknowledges that applying AI to the legal industry has the potential to increase decision-making support, increase access to justice, and boost process efficiency. It also recognizes that using AI in law may give rise to issues with morality that need to be resolved and addressed.

The AI Act distinguishes between different categories of AI systems, based on their potential risk to individuals, society, and the environment. For example, AI systems that are used to make decisions with legal effects, such as in court proceedings, are likely to be classified as high-risk systems and subject to strict requirements.

The AI Act mandates that AI systems used in areas of the law be created and built in a way that guarantees transparency, accountability, and fairness. This means that users of AI systems must be informed about how the system works and the data used to train it. Additionally, the AI Act requires that AI systems used in legal contexts are subject to human oversight, meaning that there must always be a person responsible for the final decision.

Overall, the AI Act recognizes the potential benefits of AI in the legal field but emphasizes the need for responsible use and adequate safeguards. The regulation aims to ensure that AI systems used in law respect fundamental rights and ethical principles and contribute to the promotion of human well-being.

Adding to the above, as the scholars Marrow, Karol, and Kuyan point out, much of the difficulty lies in whether current legal instruments even permit arbitrators who are not natural persons. Their findings underscore the uncertainty of enforcing AI-issued awards.³²⁵ Scholar Horton further warns that meaningful consent is at stake: even if parties appear to consent to an AI arbitrator, the fairness of such consent may be questioned under mandatory arbitration law.³²⁶ In my opinion, the current debate should focus less on whether AI could theoretically serve as an arbitrator and more on whether existing arbitration laws and international conventions are capable

324 European Commission, Proposal for a Regulation of the European Parliament and of the Council Laying Down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act) COM(2021) 206 final (21 April 2021)

325 Paul Bennett Marrow, Mansi Karol and Steven Kuyan, 'Artificial Intelligence and Arbitration: The Computer as an Arbitrator—Are We There Yet?' (2020) 74(4) *Dispute Resolution Journal* <<https://www.marrowlaw.com/wp-content/uploads/2021/02/Marrow-et-al.-AI-and-Arbitration.pdf>> accessed 24 January 2024.

326 David Horton, 'Forced Robot Arbitration' (2024) 109 *Cornell Law Review* 679 <<https://publications.lawschool.cornell.edu/lawreview/wp-content/uploads/sites/2/2024/04/Horton-final-4-11-24.pdf>> accessed 16 February 2025.

of accommodating such a development. Until there is explicit recognition of non-human arbitrators, the enforceability of AI-issued awards will remain uncertain. Thus, the issue is not simply one of party autonomy, but also one of institutional legitimacy and legal certainty.

Yet, besides the legal normative approach, the question of the possibility of AI taking the role of human arbitrators highlights the important role that public policy could have in answering this ongoing debate.

B. The Social Context

An important factor in international arbitration, across Inter-State, International Investment, and International Commercial Arbitration, is public policy. It has been known as a blanket term in international arbitration since it includes violations from due process to violation of the fundamental applicable laws and regulations.³²⁷ The New York Convention and the UNCITRAL Model Law both consider the forum's public policy. This is why there is no unified and universal definition for public policy since its definition may change depending on the forum state. As a result, it's crucial to consider the public policy of the state wherever procedures are being challenged or where a request is being made for the recognition or enforcement of an award. A state's legal, economic, and social order, as well as the fundamental rights and liberties of its inhabitants, as well as social norms and moral standards, may all be defended by certain principles, which are referred to as public policy ideals. Empirical data from the author's survey underscores that practitioners value enforceability and public trust over full automation, reflecting why public policy exceptions may remain robust in resisting AI-only awards.

However, when answering the question of the possibility of AI replacing human arbitrators, several issues regarding public policy can arise when arbitral awards are rendered and issued by AI arbitrators. One of the issues is when the law of the forum requires the arbitral award to be issued by a natural arbitrator. In this case, the arbitral awards issued by AI arbitrators can be placed aside and rejected as a result of the laws and public policy of the forum. The New York Convention has reflected this position in Article V(2)(b)³²⁸, where it is stated clearly that the recognition and enforcement of arbitral awards are rejected and refused if the competent authority finds that this recognition and enforcement of the award is contrary to the applicable public policy.³²⁹ Therefore, we can deduce that the interpretation of whether the breach of public policy took place should be determined. These legal interpretations can be tested against the survey results in Section 2, where the overwhelming majority of practitioners indicated that AI is currently used to support, rather than replace, human arbitrators. This alignment suggests that current legal constraints reflect prevailing professional attitudes. This concern is reinforced by the survey's finding that 93.1% of respondents believe AI tools should support, not replace, arbitrators—indicating a strong alignment between professional sentiment and public policy caution. Empirical data from the

327 Gizem Halis Kasap, 'Can Artificial Intelligence ("AI") Replace Human Arbitrators? Technological Concerns and Legal Implications' (2021) 2021(2) *Journal of Dispute Resolution* <<https://scholarship.law.missouri.edu/jdr/vol2021/iss2/5>> accessed 20 February 2025.

328 328 Convention on the Recognition and Enforcement of Foreign Arbitral Awards (New York Convention) (adopted 10 June 1958, entered into force 7 June 1959) 330 UNTS 3 art V(2)(b) <<https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/new-york-convention-e.pdf>> accessed 30 January 2024.

329 Mohammad Sadegh Sotoudeh, 'Investigating Employment of AI Arbitrators in International Commercial Arbitration According to UNCITRAL Model Law (1985)' (2024) 4 *SN Social Sciences* 187 <<https://doi.org/10.1007/s43545-024-00985-8>> accessed 03 March 2025.

author's survey underscores that practitioners value enforceability and public trust over full automation, reflecting why public policy exceptions may remain robust in resisting AI-only awards.

Another issue that could arise is related to the impartiality and independence of AI arbitrators. This issue can be raised since AI arbitrators are considered data machines that function based on the collected data. Therefore, the data inserted and collected by the AI arbitrator can be discriminatory which would lead to having the arbitral award issued by them to be discriminatorily causing impartiality issues. It should be stated that although impartiality and discriminatory problems can also occur in human arbitrators' situations, however, having AI machine arbitrators functioning on the data collected and without emotional intelligence may increase the possibility of discrimination.

In addition to what has been stated above, another issue could be related to the reasoning of arbitral awards, since the lack of reason in the arbitral awards issued by AI arbitrators may also be considered a violation of public policy. According to Article 31 (2) of the UNCITRAL Law Model³³⁰, unless the parties have agreed that there are no grounds to express, the arbitral award must include the reasons upon which it was given. Several pieces of legislation in multiple jurisdictions require any decision or arbitral award issued to include reasons as a requirement of justice to help parties understand why and how this decision was taken. As a result, in these nations, if AI arbitrators make arbitral rulings without sufficient justification, it is viewed as a breach of public policy and will result in the arbitral award being invalidated since the parties' entitlement to a just and reasoned award was not honored. Finally, according to several experts' opinions, the idea of AI arbitrators replacing human arbitrators is itself a violation of public policy due to the fear of the unknown.³³¹ In other words, several jurisdictions and international frameworks require arbitral awards to include clear reasons, this requirement ensures fairness, transparency, and the parties' understanding of the decision. Courts may view an AI arbitrator's unexplained "black box" decision-making as a breach of these fundamental values, particularly if it compromises impartiality or justice. Indeed, scholars have highlighted that an award rendered without transparent reasoning conflicts with parties' rights to a fair trial. For instance, under Korean Arbitration Act, courts may set aside awards that violate public policy or "good morals".³³² This concern is reinforced by the survey's finding that 93.1% of respondents believe AI tools should support, not replace, arbitrators, indicating a strong alignment between professional sentiment and public policy caution.

To conclude, assessing whether AI-issued arbitral awards violate public policy requires a nuanced analysis of how such awards align with a state's legal framework and societal values. Ultimately, the way national courts respond to the growing integration of technology in arbitration

330 Id.

331 José María de la Jara, Daniela Palma and Alejandra Infantes, 'Machine Arbitrator: Are We Ready?' (Kluwer Arbitration Blog, 4 May 2017) <<https://arbitrationblog.kluwerarbitration.com/2017/05/04/machine-arbitrator-are-we-ready/>> accessed 03 March 2025.

332 Guillermo Argerich, Maria Blanca Noodt Taquela and Juan Jorge, 'Could an Arbitral Award Rendered by AI Systems be Recognized or Enforced? Analysis from the Perspective of Public Policy' (Kluwer Arbitration Blog, 6 February 2020) <<https://legalblogs.wolterskluwer.com/arbitration-blog/could-an-arbitral-award-rendered-by-ai-systems-be-recognized-or-enforced-analysis-from-the-perspective-of-public-policy/>> accessed 28 February 2025.

will shape the application of public policy exceptions.

IV. Data and Information

In the current era of technological advancement that has been accelerated by the COVID-19 pandemic (which was classified by the World Health Organization as a global pandemic), the legal field especially international arbitration has been facing a technological transformation in every aspect. The core of such transformation is the increased use of AI technological tools. AI technological tools progressed to a level that these tools are being used to predict the result of disputes, analyze arbitration clauses, and even draft arbitration clauses, in addition to several other tasks performed that raised the question of the possibility of AI arbitrators taking the role of human arbitrators. This ongoing debate and concern is because some countries have already applied the use of AI judges and arbitrators in the decision-making process. For example, China, has developed digital courts that are handled by AI judges.³³³

Moreover, this ongoing debate is also a result of the arbitration community's desire to apply technological tools that increase the efficiency and modernization of international arbitration. The survey and study conducted by the School of International Arbitration at Queen Mary University of London and in partnership with White & Case LLP in 2021 titled "2021 International Arbitration Survey: Adapting Arbitration to a Changing World" have examined how international arbitration has managed to adapt to the ongoing changes. This survey was considered to be the survey with the most number of respondents with 1218 questionnaire responses received and 198 interviews conducted.³³⁴ The respondents were from diverse backgrounds including in-house counsel from both public and private sectors, arbitrators, private practitioners, representatives of arbitral institutions and trade associations, academics, experts, and third-party funders.³³⁵ One of the chapters of this survey titled "Use of Technology: The Virtual Reality" investigates the usage of technological tools in 2021 in comparison to the results that were gathered in 2018. This study was conducted by inquiring about of often certain technological tools are used one of which is AI. As seen from the survey, when we compare the results of 2021 with the results recorded in 2018 we can deduce, that the use of technological tools such as videoconferencing, hearing room technologies, and cloud-based storage remained the same without any increase or decrease in their percentage of usage. However, it shows a significant increase in the use of AI tools.

According to the result chart, 35% of the respondent group stated that they have 'never' used AI, while 24% stated that they have used AI rarely. Only 15% have used AI 'frequently' or 'always'.³³⁶

It should be stated that according to this study and the interviews with respondents, it has been shown that the increased use of AI tools refers to the tools used for data analysis and document review. It has been discussed that AI technologies are considered to be expensive and mostly

³³³ Id.

³³⁴ White & Case LLP, 2021 International Arbitration Survey: Adapting Arbitration to a Changing World (Queen Mary University of London, 6 May 2021) chart 13 <<https://www.whitecase.com/insight-our-thinking/use-technology-virtual-reality>> accessed 30 January 2026.

³³⁵ Id.

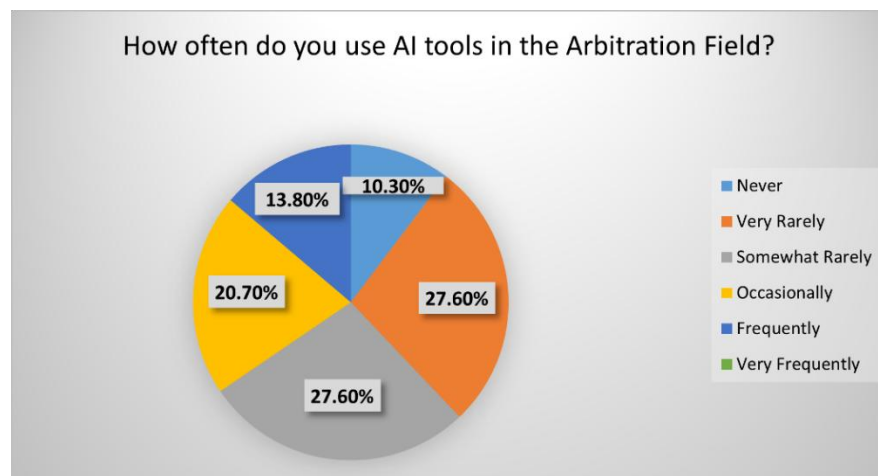
³³⁶ Id.

unaffordable. Even if parties were able to afford their price, they are not always convinced that the value produced by these AI technologies will outweigh the hefty expenditures they involve. Moreover, interviews also found that there are a persistent fear of new technology and a general lack of familiarity with it whether from a practical or legal aspect. All of the interviewees indicated some skepticism about the possible application of AI tools and algorithms for predictive justice. They brought up moral questions and questioned how much such instruments should or may obstruct the adjudicative process. The overwhelming majority of participants believed that human arbitrators and counsels cannot be replaced by AI arbitrators.

In addition to the above-mentioned data and as part of the author's research into the field of arbitration and the use of AI tools, the author conducted a survey tackling a small group of professional and experienced arbitration practitioners from diverse nationalities and backgrounds. Although the author's survey did not gather as many respondents as the School of International Arbitration's survey conducted in partnership with White & Case LLP at the Queen Mary University of London, the results were similar and supported those obtained by the latter survey. The purpose of the survey conducted by the author was to gain insights through the experiences and perspectives of the respondents on whether AI tools are used in a manner that will allow them to replace human arbitrators or if AI tools are just used to provide support to arbitrators and the arbitration field. Through this small survey, the author hopes to contribute to the broader conversation on arbitration and the use of AI tools and provide valuable insights for those involved in this field. Noting that the survey was conducted on a small but diverse group of arbitration practitioners with various backgrounds and nationalities. This original survey, designed and implemented by the author, serves as an empirical contribution to the debate.

According to Figure (1) below, the first question posed to the respondents was about the frequency of their use of AI tools in the arbitration field. The results indicate that most respondents use AI tools in their profession but at different levels and frequencies. Specifically, 13.80% of the respondents use AI tools frequently, while 20.70% use them occasionally. Additionally, 27.60% use AI tools somewhat rarely, while another 27.60% reported using them very rarely. Finally, 10.30% of respondents declared that they do not use AI tools in their arbitration field.

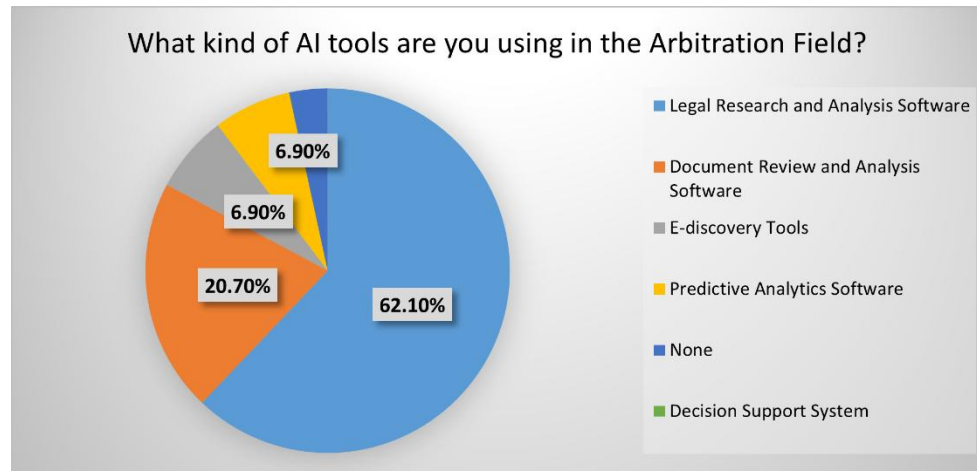
FIGURE 1 THE USE OF AI TOOLS IN ARBITRATION



We can deduce that a small percentage of respondents do not use AI tools in their arbitration field compared to the other percentages. This finding supports a study conducted by the School of International Arbitration at Queen Mary University of London and in partnership with White & Case LLP in 2021, which investigated the usage of technological tools in arbitration. Both studies indicate an increase in the use of AI tools in the arbitration field.

In addition, the second question shown in Figure 2 below was about the types of AI tools arbitrators use in their arbitration field. The results indicate that 62.10% of respondents use AI

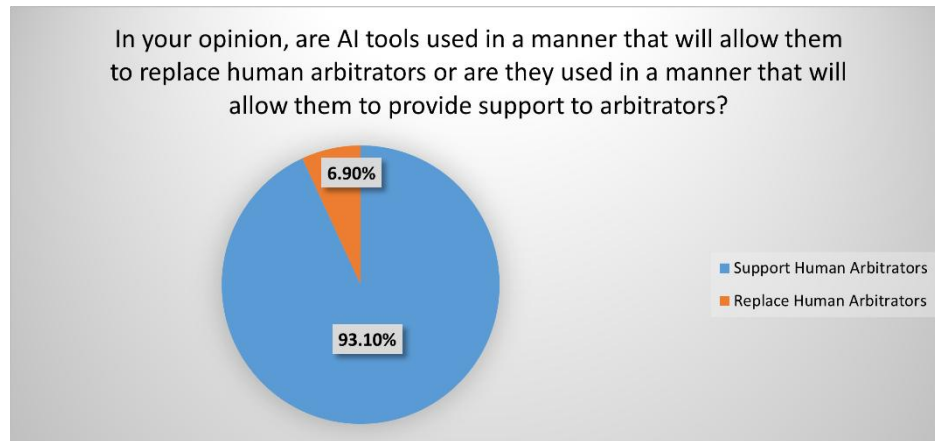
FIGURE 2 THE TYPE OF AI TOOLS USED IN ARBITRATION



tools that support legal research and analysis, while 20.70% use AI tools for document review and analysis. Furthermore, only 6.90% of respondents use AI tools that provide predictive analytics software and e-discovery tools. Surprisingly, none of the respondents reported using AI tools that provide decision support systems. Therefore, based on the results in Figures 1 and 2, we can deduce that most arbitrators use AI tools at different frequencies; however, they tend to limit their use to tools that support legal research, document review, and predictive analysis, without the use of decision support systems which support the results of the study conducted by the School of International Arbitration at Queen Mary University of London and in partnership with White & Case LLP in 2021 (mentioned above).

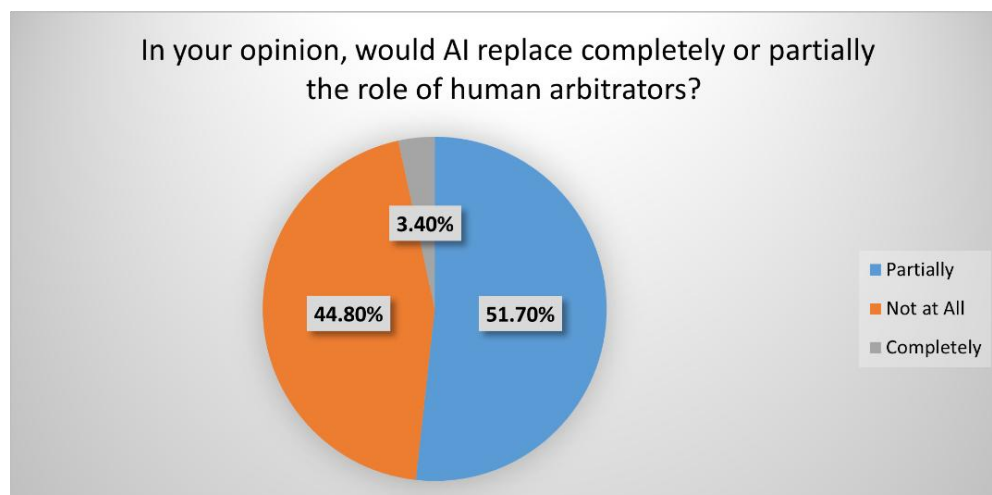
Moreover, Figure 3 below shows whether respondents believe that AI tools are used in a manner that allows them to replace human arbitrators or if they are used in a way that provides support to arbitrators. The results indicate that 93.10% of respondents believe that AI tools are used in a manner that provides support to human arbitrators, while only 6.90% of respondents believe that AI tools are used in a manner that would replace human arbitrators.

FIGURE 3 THE MANNER OF THE USE OF AI TOOLS



Also, the results in Figure 4 below, along with the respondents' short answers on their beliefs regarding the aspects in which AI will assist or replace human arbitrators, show that 51.70% of the respondents believe that AI will partially replace human arbitrators. They believe that AI will replace human arbitrators in aspects related to data collection, analysis software, summarizing evidence, legal research, and document review since the use of AI tools in these aspects will assist arbitrators and help them save time and solve disputes more efficiently. On the other hand, 44.80% of the respondents believe that AI will not replace human arbitrators. According to their short answers on the aspects in which AI will assist or replace human arbitrators, some stated that although AI could assist in having a quick and efficient arbitration process, it will not replace human arbitrators.

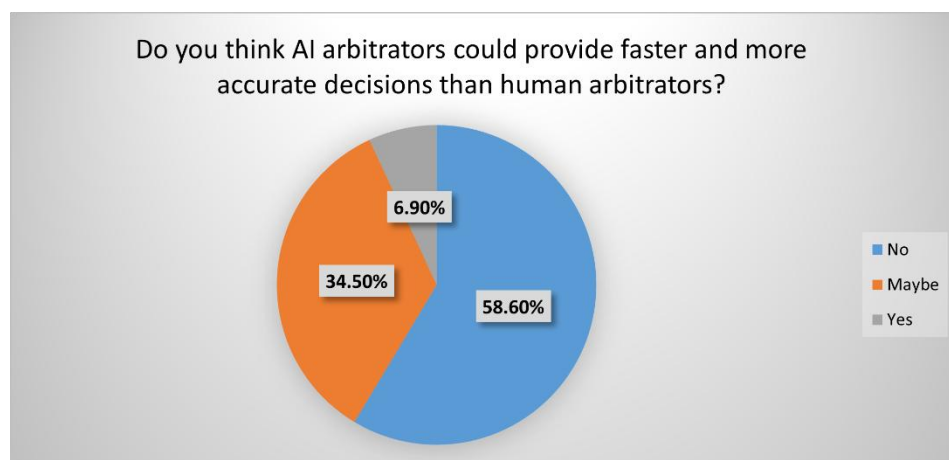
FIGURE 4 WOULD AI REPLACE HUMAN ARBITRATORS?



It should be noted that only 3.40% of the respondents believe that AI would completely replace the role of human arbitrators. Therefore, we can deduce that the percentage of respondents who believe that AI would completely replace human arbitrators is very low compared to the percentage of respondents who believe that AI would not or would partially replace human arbitrators by providing support for a faster and more efficient process. Moreover, these results support and are in line with the findings of the study conducted by the School of International Arbitration at Queen Mary University of London and in partnership with White & Case LLP in 2021, which showed that the majority of participants believed that human arbitrators and counsels cannot be replaced by AI arbitrators.

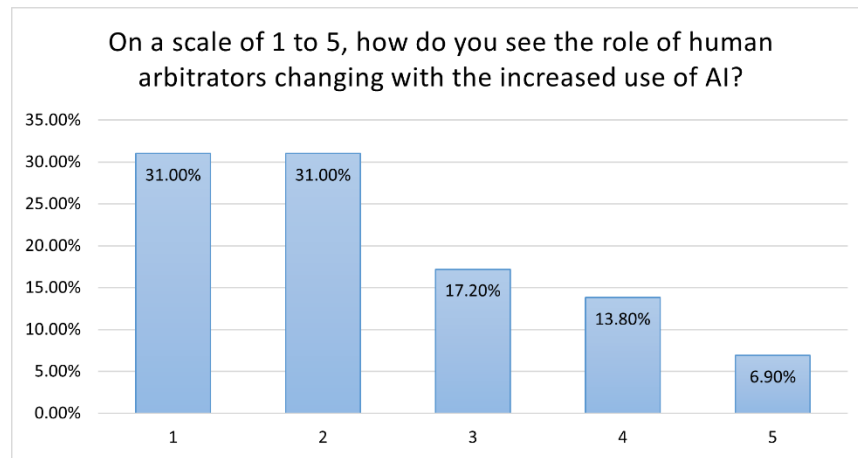
Moreover, Figure 5 below shows the results regarding whether AI arbitrators could provide faster and more accurate decisions than human arbitrators. The results indicate that 58.60% of respondents believe that AI arbitrators could not provide faster and more accurate decisions compared to the 6.90% of respondents who believe that they could. It is also significant to mention that 34.50% of respondents answered "maybe" to this question.

FIGURE 5 IS AI FASTER AND MORE ACCURATE THAN HUMAN ARBITRATORS?



Last but not least, Figure 6 below addresses the question of how the role of human arbitrators is changing with the increased use of AI, on a scale of 1 to 5. The figure shows that 31% of respondents believe the role is slightly changing, while only 6.90% believe it is very changing.

FIGURE 6 ROLE OF HUMAN ARBITRATORS IN THE LIGHT OF THE INCREASED USE OF AI



We can conclude from the data, information, and analysis provided above that there has been a significant increase in the use of AI tools by arbitration practitioners in the arbitration field. However, this increased use of AI tools focuses on the AI tools that assist arbitrators in increasing efficiency and saving time, rather than replacing them from a decision-making perspective. Moreover, the results have shown that it is believed that the increased use of AI tools is limited to supporting arbitrators rather than replacing them completely, as the belief that faster and more accurate decisions remain a significant characteristic of human arbitrators, not an AI arbitrator. Notably, the empirical findings both support and contextualize the legal analysis above: while laws and conventions implicitly require human arbitrators, practitioners' overwhelming preference for AI as a supportive tool rather than a replacement suggests that legal norms are not merely restrictive but are consistent with professional consensus.

V. Discussion

Scholars Marrow, Karol, and Kuyan (2020) left the question of 'Are we there yet?' open. This study's findings suggest the answer remains negative under current conditions, though future reforms may shift the balance.³³⁷ Scholar Horton, however, urges caution, warning that premature or forced adoption may compromise fairness and erode confidence in arbitration as a trusted mechanism.³³⁸

³³⁷ Paul Bennett Marrow, Mansi Karol and Steven Kuyan, 'Artificial Intelligence and Arbitration: The Computer as an Arbitrator—Are We There Yet?' (2020) 74(4) *Dispute Resolution Journal* <<https://www.marowlaw.com/wp-content/uploads/2021/02/Marrow-et-al.-AI-and-Arbitration.pdf>> accessed 24 January 2024.

³³⁸ David Horton, 'Forced Robot Arbitration' (2024) 109 *Cornell Law Review* 679 <<https://publications.lawschool.cornell.edu/lawreview/wp-content/uploads/sites/2/2024/04/Horton-final-4-11-24.pdf>> accessed 16 February 2025.

In my opinion, AI tools have advanced to the stage where they can perform many of the tasks that an arbitrator can. The increasing use of AI tools in arbitration is significant. Time has shown that no profession is immune to having AI tools take control of some aspects of its work, including the role of an arbitrator. By processing materials in a way that is similar to human arbitrators, AI poses a challenge to the international arbitration field. This technological development and rapid adoption of new tools have led to this article addressing the ongoing debate over whether AI arbitrators could replace human arbitrators from legal and social perspectives. In other words, the article examines whether AI tools are used to replace human arbitrators or merely to support them and the arbitration field.

From a legal perspective, this article has analyzed and studied several pieces of legislation, conventions, and instruments used by arbitration organizations to determine whether AI can replace human arbitrators according to current applicable regulations. It has been realized that the legal framework of arbitration is designed to have human arbitrators as decision-makers, whether this is stated clearly in the regulations or indirectly deduced from the requirements for arbitral awards, arbitrators, and the arbitral process in general. Noting that in my opinion, only time can confirm if AI tools can replace human arbitrators.

Moreover, it should be noted that implementing the use of AI tools and AI arbitrators without suitable regulations on their use and application in the arbitration field could impact arbitration's reputation as a preferred dispute resolution mechanism. Therefore, the European Commission's proposal for the Artificial Intelligence Act ("the AI Act"), published on 21 April 2021, is considered a significant step toward modernizing the applicable regulations. The AI Act distinguishes between different categories of AI systems based on their potential risk to individuals, society, and the environment. It mandates that AI systems used in areas of the law be created and built in a way that guarantees transparency, accountability, and fairness. This means that users of AI systems must be informed about how the system works and the data used to train it. Additionally, the AI Act requires that AI systems used in legal contexts are subject to human oversight, meaning that there must always be a person responsible for the final decision.

In other words, the AI Act recognizes the potential benefits of AI in the legal field but emphasizes the need for responsible use and adequate safeguards. The regulation aims to ensure that AI systems used in law respect fundamental rights and ethical principles and contribute to the promotion of human well-being.

From a social perspective, public policy plays a significant role in the use of AI in arbitration and the possibility of AI arbitrators replacing human arbitrators. When answering the question of whether AI can replace human arbitrators, several issues regarding public policy can arise when arbitral awards are rendered and issued by AI arbitrators, especially if they violate state law and societal norms. As mentioned earlier, how courts, laws, regulations, and society respond to technology will determine how public policy grounds are and will be applied. This concern is reinforced by the survey's finding that 93.1% of respondents believe AI tools should support, not replace arbitrators, indicating a strong alignment between professional sentiment and public policy caution.

Furthermore, the statistical studies, results, and data mentioned in Part III help in having an initial answer to the ongoing debate. The results of studies, whether conducted by the author or by the School of International Arbitration at Queen Mary University of London and in partnership with White & Case LLP, demonstrate a significant increase in the use of AI tools by arbitration practitioners in the arbitration field. However, this increase despite its frequency is focused on tools that assist arbitrators to increase efficiency and save time, rather than replacing them from a decision-making perspective. Additionally, the results have shown that most respondents agree that AI tools are only used in a manner that supports arbitrators and would not replace human arbitrators. In my opinion, this indicates a cautious and pragmatic approach, one that acknowledges the benefits of technological innovation while safeguarding the essential role of human judgment, fairness, and legitimacy in arbitration.

VI. Conclusion

This article has examined the potential for AI arbitrators to replace human arbitrators, considering both legal and social perspectives. The analysis suggests that, within the current legal framework, AI arbitrators are unlikely to fully replace human decision-makers. Existing arbitration laws emphasize the requirement of human judgment, consent, and due process, making legislative reform a prerequisite for AI to assume such a role. Socially, too, parties continue to prefer the assurance of human reasoning, accountability, and empathy in adjudication.

At present, AI tools are most effectively deployed as support mechanisms assisting with document review, translation, case management, and predictive analytics, thereby enhancing efficiency while leaving final decision-making to human arbitrators. Looking forward, however, incremental reforms could progressively broaden the role of AI. Legislators and arbitral institutions should consider:

- Regulatory innovation: adopting clear guidelines that permit AI to assist in defined procedural or evidentiary tasks while safeguarding party autonomy and due process.
- Transparency and disclosure standards: requiring parties to be informed of how AI is used during proceedings, thus maintaining fairness and confidence.
- Ethical oversight frameworks: creating specialized committees or adapting institutional rules to monitor the risks of bias, data security, and accountability in AI-assisted arbitration.
- Capacity building: training arbitrators and practitioners in the responsible use of AI tools to ensure equal access and reduce technological asymmetry between parties.

From my perspective, AI arbitrators may, in the medium term, take on routine or procedural functions, but full substitution of human arbitrators remains unlikely in the foreseeable future given legislative, cultural, and public policy constraints. Nevertheless, with thoughtful reforms, AI could evolve from a mere support tool into a trusted partner in arbitration, enhancing efficiency without eroding the human values that underpin justice. Yet, the key question remains: will the future of arbitration witness AI as a co-pilot to human judgment, or as a full-fledged arbitrator in its own right?

Chapter 7

**Analysis, Insights, and Recommendations On The Use of AI in
International Arbitration Across Inter-State, International Investment,
and International Commercial Arbitration**

AI is transforming into numerous fields, with international arbitration being no exception. As highlighted in previous chapters, AI holds significant potential to enhance both the efficiency and accuracy of arbitration decisions. Yet, the adoption of AI in arbitration also raises critical questions and potential drawbacks, necessitating careful examination and thoughtful strategies.

Building on the foundations established earlier, this chapter synthesizes the key findings of the research and integrates insights from prior discussions. It aims to provide a comprehensive understanding of the implications of AI in international arbitration, bridging theoretical frameworks with practical experiences.

The chapter begins with an analysis of the data and themes emerging from the expert interviews and previous chapters, followed by a discussion of their broader implications. It then revisits the hypotheses introduced in the thesis, assessing whether the outcomes support or challenge the initial assumptions. Finally, the chapter concludes with practical recommendations designed to guide arbitrators, practitioners, stakeholders, and policymakers toward the responsible, ethical, and effective integration of AI into arbitration practice.

I. Analysis & Discussion

Building on the findings from the literature review and the methodological choices discussed in previous chapters, this section examines the key hypothetical questions raised earlier to assess the impact of AI on international arbitration, including its current gaps and future potential. To provide a comprehensive perspective, the analysis is organized into three parts: (A) gathering additional insights from interviews with arbitrators, building on the perspectives presented in earlier chapters, (B) providing a descriptive overview of the data collected from previous chapters, and (C) interpreting the results to draw meaningful conclusions regarding the hypothesis proposed in this thesis.

A. *Additional Insights from Arbitrators*

To further build upon the insights shared in previous chapters, I sought the perspectives of arbitrators by asking them, based on their experiences, “Are there skills or areas of expertise that may become more or less important as AI adoption grows”? This question sparked a wealth of valuable responses, offering diverse viewpoints on how AI is reshaping the skill set required in international arbitration. The insights gathered provide a deeper understanding of the evolving role of arbitrators, the competencies that may gain prominence, and those that could diminish in significance as AI continues to integrate into arbitration processes.

According to *Mihaela Apostol*³³⁹

“More important:

- Technical proficiency: Understanding how AI tools work and how to interpret their outputs will be essential.
- Data analytics: Lawyers and arbitrators will need to leverage AI-generated insights effectively.
- Ethics and governance: Expertise in ensuring ethical and transparent use of AI will be critical.

Less important:

- Routine tasks like document review or basic legal research will become less central to a practitioner’s role, as these are areas where AI excels” (Interview, January 03, 2025).³⁴⁰

According to *Sarah Reynolds*³⁴¹ “Being comfortable and being able to use AI tools responsibly will become a skill and will be different among arbitrators in the market. Honestly, I do see AI replacing arbitrators in simple tasks, but not really replacing what an arbitrator does or decides in a case. However, I think the arbitrators who become skillful in using AI tools in a way that makes sense will have an advantage. Also, parties that use AI tools will benefit from a counsel perspective” (Interview, January 10, 2025).³⁴²

According to *Dragana Nikolic*³⁴³ “I believe that familiarity with AI tools, an understanding of the technology behind them, and the ability to evaluate AI-generated results will be essential for lawyers to effectively use AI tools in their work” (Interview, January 19, 2025).³⁴⁴

According to *Raymond (Rony) Joseph Araygi*³⁴⁵

³³⁹ Mihaela Apostol is an independent counsel and arbitrator based in London. Mihaela is a civil and common law qualified lawyer with ten years of experience in international arbitration having worked as counsel, tribunal secretary and arbitrator. She is an Avocat of the Bar of Bucharest, Romania and a Solicitor of the Supreme Court of England and Wales.

³⁴⁰ Mihaela Apostol, Interview by Layan Al Fatayri, Virtual, January 03, 2025.

³⁴¹ Sarah Reynolds is an independent arbitrator based in the United States. She is cross licensed in the US, U.K. and Ireland. Sarah focuses on cross-border and domestic commercial disputes and is a former partner in the international arbitration practice of Mayer Brown LLP.

³⁴² Sarah Reynolds, Interview by Layan Al Fatayri, Virtual, January 10, 2025.

³⁴³ Dragana Nikolić is an independent attorney-at-law admitted to the bar in Serbia, cooperating with Queritius as Counsel. She specializes in international commercial and investor-state arbitration, managing complex cross-border cases before leading arbitration institutions, and serves as the regional representative for Young ICCA in Europe. Additionally, Dragana holds a bachelor’s degree from the University of Belgrade Faculty of Law and master’s degrees in international law from the University of Cambridge and the University of Belgrade.

³⁴⁴ Dragana Nikolić, Interview by Layan Al Fatayri, Virtual, January 19, 2025.

³⁴⁵ Raymond (Rony) Joseph ARAYGI holds a Lebanese Master’s in Law and a Diploma of Higher Studies (DES) in Private Law from Saint Joseph University—Beirut. Admitted to the Beirut Bar in 1989, Rony is the Managing Partner of ARAYGI & MAALOUY LAW FIRM, established in 1998. Since then, he has been involved in numerous commercial, corporate, fiscal, taxation, and criminal matters. Rony has also participated in international and local arbitrations, both ad hoc and institutional, including under the Rules of the ICC International Court of Arbitration, the Dubai International Arbitration Center (DIAC), and the Lebanese Arbitration and Mediation Center (LAMC), handling a variety of matters such as post-M&A, distribution, construction, joint ventures, and intellectual property. Rony served as Lebanon’s Minister of Culture from February 2014 to December 2016 and received the French civilian distinction of "Commandeur des Arts et des Lettres" in 2016.

“More Important:

- AI literacy & technology skills
- Data privacy & cybersecurity knowledge
- Critical assessment of AI-generated insights
- Ethics & AI bias understanding

Less Important:

- Manual document review
- Traditional legal research (partially replaced by AI tools)” (Interview, February 14, 2025).³⁴⁶

These insights from arbitrators provide valuable context for understanding how AI is perceived in practice and the expected future it holds in the field. The next section presents a descriptive overview of all the collected data to map out the hypothesis raised in this thesis and to illustrate how the evidence aligns with or challenges it.

B. Descriptive Overview

Building on the insights discussed above, this section will provide a descriptive overview of the data and information presented in previous chapters. This step is essential to contextualizing the findings and establishing a solid foundation for interpreting the results. Through this analysis, we aim to derive meaningful conclusions regarding the role of AI in international arbitration and specifically regarding the hypothesis raised in this thesis.

The development of international arbitration, specifically inter-state, international investment, and international commercial arbitration, has long been a story of legal improvement, from early diplomatic negotiations and courts to today’s institutional-based dispute resolution systems. However, a new dynamic has emerged in recent years: the integration of technology, specifically AI, into international arbitration.

In the first three chapters, we looked at how inter-state, international investment, and international commercial arbitration, the main components of international arbitration, have evolved, both legally and historically. These systems are built on key agreements like the Jay Treaty, the Hague Conventions, BIT, and more modern frameworks such as the UN Charter, the TFEU, and the New York Convention. Together, they’ve created a strong foundation for resolving disputes peacefully, respecting state sovereignty, and ensuring that arbitration awards can be enforced.

The historical and empirical record demonstrates that arbitration has consistently evolved through external frameworks that provide its legitimacy, beginning with inter-state arbitration, which was grounded in treaties such as the Jay Treaty of 1794 and the Hague Conventions of 1899 and 1907, later reinforced by the United Nations Charter and institutionalized through the Permanent Court of Arbitration, yet remains relatively limited in practice as states continue to prefer adjudication before the International Court of Justice or diplomatic negotiation, confirming that its legitimacy

³⁴⁶ Raymond (Rony) Joseph ARAYGI, Interview by Layan Al Fatayri, Virtual, February 14, 2025.

has been shaped more by treaty law than by consistent usage. In contrast, international investment arbitration experienced exponential growth in the twentieth century through the proliferation of bilateral investment treaties and the 1965 ICSID Convention, which granted investors substantive protections such as fair and equitable treatment and protection against expropriation alongside procedural guarantees like direct investor access to arbitration; descriptive data show that by the early 2000s, hundreds of cases had been filed under ICSID and UNCITRAL rules against the backdrop of thousands of BITs, while legitimacy debates around transparency, consistency, and regulatory autonomy also emerged, rooted in this treaty-driven origin and reflected in subsequent reform initiatives such as the Mauritius Convention on Transparency and the work of UNCITRAL Working Group III. International commercial arbitration, by contrast, achieved global acceptance largely through the 1958 New York Convention, ratified by more than 170 states and guaranteeing the recognition and enforcement of arbitral awards, which gave businesses unprecedented legal certainty and made arbitration the preferred mechanism for cross-border disputes, reinforced by the UNCITRAL Model Law of 1985 (revised 2006), with descriptive case law showing that parties consistently chose arbitration over litigation for reasons of neutrality, confidentiality, and enforceability.

Yet over the years, arbitration has shown an incredible ability to adapt. From its early days as a diplomatic tool to a well-established legal process used worldwide. Now, arbitration is facing a new trend: integrating AI. Arbitration has proven highly receptive to technological innovation, first through email communication, electronic filings, and online hearings, and more recently through artificial intelligence tools that now play a growing role in case management, data processing, and decision-support functions. Descriptive evidence highlights the integration of AI in scheduling hearings, monitoring procedural deadlines, and organizing virtual proceedings, in addition to e-discovery, document review, evidence categorization, and translation, with judicial approval of predictive coding for document review in cases and cautionary lessons from mistranslations; tools such as Jus Mundi's AI-powered research platform, the Arbitrator Intelligence's data-driven arbitrator selection system, and even the AAA AI arbitrator further illustrate how AI is embedded in practice. The empirical findings reveal that, while most practitioners currently use AI for administrative and document-intensive tasks, far fewer rely on it for outcome prediction or substantive drafting. This reflects broader concerns surrounding transparency, bias, and reliability. The interview data further supports these findings, indicating that practitioners generally view AI as particularly useful in improving efficiency, reducing administrative burdens, managing large volumes of documentation, and facilitating cross-border legal research and translation. The descriptive findings also point to several notable benefits associated with the use of AI in arbitration. These include reduced costs and billing pressures, as well as significant time savings in document review, case preparation, and administrative tasks. Participants also identified improvements in legal research and information retrieval, particularly in relation to the speed and breadth of comparative and cross-border research. In multilingual proceedings, AI was further seen as enhancing accessibility through translation and language support, thereby facilitating more efficient communication across jurisdictions. In addition, some findings suggested that AI may contribute to greater transparency and diversity in arbitrator appointments by improving access to relevant professional data and appointment patterns.

Although still more limited in practice, the use of predictive analytics was also identified as an emerging area with potential relevance for case assessment and strategic decision-making. At the same time, these benefits are accompanied by a number of important drawbacks. One of the clearest concerns is accuracy. AI systems are capable of generating incorrect or even entirely fabricated information, which is especially problematic in legal proceedings where the reliability of authorities, facts, and submissions is essential. There are also concerns about bias, particularly where AI systems are trained on incomplete or unbalanced datasets, which may affect the neutrality of their outputs and raise fairness concerns. Confidentiality and cybersecurity also remain major issues. Arbitration often involves highly sensitive commercial and procedural information, and the use of AI tools raises serious questions about how that information is stored, processed, and protected. In addition, many AI systems operate in ways that are not fully transparent. This so-called “black box” problem makes it difficult to understand how certain outputs are produced, which can undermine confidence in the fairness, transparency, and legitimacy of the arbitral process.

One issue that receives less attention, but is equally important, is the burden of proof in cases involving AI. As a general rule, the burden of proof lies on the party making the allegation. This means that if a party claims that AI has been used improperly, or that AI-generated material has affected the evidence before the tribunal, that party would usually be expected to prove it. The difficulty, however, is that the use of AI may not always be obvious. It may not be disclosed, and it may be embedded in internal workflows, digital systems, or proprietary tools that are not visible to the opposing party or even to the tribunal itself. This makes proof especially difficult. In some cases, a party may suspect that AI was used, but still struggle to show when it was used, how it was used, and whether it actually influenced the proceedings. The challenge becomes even greater where AI is alleged to have affected the evidence itself, for example, by generating inaccurate summaries, misleading documents, false citations, or other unreliable material. In that situation, the issue is not only proving that AI was involved, but also proving that its involvement had a meaningful impact on the case. This creates an additional procedural challenge and may place greater pressure on arbitrators to inspect more carefully the authenticity, reliability, and origin of the evidence before them.

Looking ahead, it seems likely that the role of AI in arbitration will continue to grow, although adoption is unlikely to be uniform across the field. Some arbitral institutions and practitioners are already beginning to incorporate AI into case management, communication, legal research, and drafting support, while others remain more cautious or exploratory. Future developments are likely to include wider use of generative AI, more advanced analytical tools, and the increasing development of secure internal systems designed to balance efficiency with confidentiality and professional responsibility. Predictive analytics may also become more common in relation to settlement assessment and case strategy, although such uses remain comparatively limited at present.

It is also likely that the pace and extent of AI adoption will differ across the various branches of international arbitration. Inter-state arbitration may proceed more cautiously, given the sensitivity of sovereignty and public legitimacy concerns. Investment arbitration may engage with AI more

selectively, particularly where it intersects with ongoing debates around reform, transparency, and procedural fairness. By contrast, commercial arbitration may be more receptive to AI integration, given its stronger orientation toward business efficiency, cost-effectiveness, and procedural flexibility.

Overall, this suggests that arbitration is once again adapting to a new challenge. It has always developed in response to changes in legal practice, needs, and institutional expectations. The growing use of AI appears to be part of that same pattern. The real issue is therefore not whether AI will influence arbitration, but how that influence can be managed without undermining fairness, transparency, enforceability, and trust in the arbitral process.

C. Interpretation

Therefore, based on the above chapters and insights shared, what can we analyze, deduce, and interpret?

One of the clearest conclusions that emerges is that the relationship between AI and international arbitration is not as straightforward as it may first appear. On the one hand, AI clearly offers practical advantages, such as greater efficiency, faster processing of information, and support in managing increasingly complex disputes. On the other hand, its use immediately raises deeper concerns about legitimacy, fairness, and the role of human judgment. In other words, AI is not just being introduced as a helpful tool; it is forcing the arbitration community to rethink what makes arbitration trustworthy and acceptable in the first place. What becomes especially important here is that AI is not entering a single, uniform system. It is entering three different branches of international arbitration, inter-state arbitration, investment arbitration, and commercial arbitration, and each of these respond to AI in a different way.

Inter-state arbitration is clearly the most cautious. That is not surprising, since disputes between states are closely tied to sovereignty, diplomacy, and public authority. In this context, the process itself carries symbolic weight, and the role of human judgment is part of what gives the outcome its legitimacy. Because of that, AI is unlikely to play anything more than a limited, supporting role. It can help with research, document organization, or translation, and in those areas it may even be quite useful. But once AI begins to move closer to legal reasoning or decision-making, the concerns become much stronger. States are unlikely to accept a system where technology appears to interfere with or replace the human element in resolving disputes of that nature. So in this branch, AI may improve how things are done, but it is unlikely to change the structure of decision-making itself.

International Investment arbitration sits somewhere in between. It is more open to AI than inter-state arbitration, but at the same time, it is already under pressure when it comes to legitimacy, transparency, and fairness. Investor-state disputes tend to involve large amounts of documentation and complex procedural histories, so there is a clear practical benefit in using AI to help manage and organize that material. In that sense, AI can make the process more efficient and, potentially, more accessible. However, that openness comes with limits. Because this field is already sensitive

to concerns about fairness and accountability, AI cannot simply be used without careful consideration of its effects on due process. For example, if AI is used to summarize submissions or organize evidence, there is a real risk that certain arguments may be simplified or not fully captured. This connects directly to the right to be heard. It is not enough that parties are allowed to present their case; they also need to feel that their arguments are properly understood and considered. So, while AI may be useful in this branch, its role needs to remain clearly controlled and transparent.

International Commercial arbitration, by contrast, seems to be the most open to AI and, in many ways, the most experimental. This is largely because it is driven by different priorities, efficiency, flexibility, cost reduction, and party autonomy. In this environment, AI is not just acceptable, but often attractive. It can already assist with legal research, drafting, document review, case preparation, and even aspects of strategy. That said, even here, AI is not replacing the arbitrator. What it is really doing is changing how arbitration is carried out in practice. It is reshaping the workflow rather than the core authority behind the decision. In that sense, commercial arbitration may be the place where we first see how AI can be integrated into arbitration more broadly, but even there, the human decision-maker remains central.

When looking at all three branches together, a broader pattern becomes clear. AI tends to be accepted where it improves efficiency without interfering with what each branch considers essential for its legitimacy. Where it starts to affect fairness, transparency, or human judgment, resistance becomes stronger. This is why AI does not have the same impact everywhere. Its role depends on what each branch is trying to protect. At the same time, there are certain issues that appear across all three branches, even if they show up in different ways. One of these is the growing tension between efficiency and human judgment. AI can handle many tasks faster than before, but arbitration is not only about processing information. It also involves interpretation, discretion, and the ability to engage with the parties' positions in a meaningful way. This is where the limits of AI become clear. It cannot replicate empathy or the kind of contextual understanding that often shapes how fairness is perceived.

Another issue is more practical, but still important, is the effect of AI on how arbitration work is valued and billed. As AI takes over or speeds up tasks like research, drafting, and document review, it starts to challenge the traditional link between time spent and value delivered. This is especially relevant in commercial and investment arbitration, where billing structures are more directly tied to professional time. If work can be done faster, it raises the question of whether costs will actually decrease for parties, or whether the structure will simply adapt in other ways. So, AI is not just changing procedure; it is also starting to affect the economics of arbitration practice.

There is also the issue of transparency and proof. As AI becomes more integrated into legal work, it may not always be clear when or how it is being used. This creates a problem if a party believes that AI has influenced the process in a way that affected fairness. How can that be shown? In many cases, the party raising the concern may not have access to the tools or systems involved. That makes it difficult to identify, let alone prove, the role AI may have played. This raises questions about accountability and whether current frameworks are equipped to deal with this kind of situation.

Overall, what this thesis suggests is that AI is unlikely to completely transform international arbitration in a uniform way, but it is also unlikely to remain a minor or temporary development. Its role will probably grow over time, but in a way that reflects the specific needs and concerns of each branch. In that sense, its development is likely to be gradual rather than disruptive. Just as arbitration itself evolved over time through legal frameworks, institutional practices, and shared expectations, the use of AI will also depend on how well it can be integrated into those existing structures. Ultimately, AI is likely to become an important part of international arbitration, but only to the extent that it supports, rather than weakens, the principles that the system relies on being fairness, transparency, human judgment, and trust in the process. These findings also reinforce the need for a balanced regulatory approach to AI in international arbitration. As discussed in Chapter 5, neither a purely soft-law framework nor a fully centralized binding regime is sufficient to address the challenges identified. Instead, the evolving role of AI across the different branches of arbitration supports the need for a hybrid approach, combining flexibility with targeted safeguards. Such an approach allows arbitration to adapt to technological developments while ensuring that core principles such as fairness, transparency, and human judgment are preserved.

II. Recommendations

As AI continues to shape the field of international arbitration, it is crucial to examine the best practices and expert recommendations to ensure its responsible and effective use. This section compiles insights from experienced arbitrators and official guidelines, highlighting key considerations for practitioners integrating AI into their work. By exploring expert perspectives and institutional recommendations, this section aims to provide a comprehensive guide to navigating AI adoption in arbitration.

During the interview, the final question I posed to the arbitrators was: “Based on your experience, do you have any recommendations for arbitrators using AI tools in their practice”? This question provided a variety of insightful responses and valuable recommendations, shedding light on best practices, potential challenges, and ethical considerations surrounding AI adoption in arbitration. The perspectives shared not only enhance our understanding of how arbitrators currently engage with AI but also offer guidance on how they can effectively integrate these tools while maintaining fairness, efficiency, and professional integrity in international arbitration.

According to *Mihaela Apostol*³⁴⁷ “Understand the tool, the risks involved, and how data is collected” (Interview, January 03, 2025).³⁴⁸

³⁴⁷ Mihaela Apostol is an independent counsel and arbitrator based in London. Mihaela is a civil and common law qualified lawyer with ten years of experience in international arbitration having worked as counsel, tribunal secretary and arbitrator. She is an Avocat of the Bar of Bucharest, Romania and a Solicitor of the Supreme Court of England and Wales.

³⁴⁸ Mihaela Apostol, Interview by Layan Al Fatayri, Virtual, January 03, 2025.

According to *Sarah Reynolds*³⁴⁹ “I would say don’t ignore AI. I think it is an embracer situation, and arbitrators should be encouraged to educate themselves about these tools so they understand the risks and limitations and can use them responsibly where it makes sense in their matters” (Interview, January 10, 2025).³⁵⁰

According to *Dragana Nikolić*³⁵¹ “Since I do not use AI daily or for a significant portion of my work, I am not fully familiar with all its pros and cons, making it difficult for me to provide any recommendations for arbitrators or other legal professionals” (Interview, January 19, 2025).³⁵²

According to *Raymond (Rony) Joseph Araygi*³⁵³ “Based on my modest experience, arbitrators using AI tools should:

- Use AI as an Aid, Not a Replacement: AI should support, not replace, human judgment.
- Verify AI-generated results by always cross-checking AI-driven research and predictions—do not assume they are entirely accurate.
- Exercise Caution with Predictive Analytics: While AI can assist in case strategy and risk assessment, its predictions should be critically evaluated.
- Prioritize Data Privacy by ensuring strict compliance with confidentiality rules when using AI tools” (Interview, February 14, 2025).³⁵⁴

Furthermore, Part II of the CIArb AI Guidelines, launched on 19 March 2025, offers general recommendations on the use of AI in arbitration. These recommendations include guidance on best practices, ethical considerations, and procedural safeguards to ensure the responsible and effective integration of AI into arbitral proceedings. Specifically, the guidelines encourage parties and arbitrators to: (1) conduct reasonable inquiries into any prospective AI tool to understand its technology, function, and data to the best of their ability; (2) assess potential risks associated with AI use, weighing its benefits against arbitration-related risks, including due process concerns, rule of law implications, and the credibility of arbitration; (3) stay informed about AI-related laws, regulations, and court rules applicable in relevant jurisdictions; and (4) recognize that, unless

³⁴⁹ Sarah Reynolds is an independent arbitrator based in the United States. She is cross licensed in the US, U.K. and Ireland. Sarah focuses on cross-border and domestic commercial disputes and is a former partner in the international arbitration practice of Mayer Brown LLP.

³⁵⁰ Sarah Reynolds, Interview by Layan Al Fatayri, Virtual, January 10, 2025.

³⁵¹ Dragana Nikolić is an independent attorney-at-law admitted to the bar in Serbia, cooperating with Queritius as Counsel. She specializes in international commercial and investor-state arbitration, managing complex cross-border cases before leading arbitration institutions, and serves as the regional representative for Young ICCA in Europe. Additionally, Dragana holds a bachelor’s degree from the University of Belgrade Faculty of Law and master’s degrees in international law from the University of Cambridge and the University of Belgrade.

³⁵² Dragana Nikolić, Interview by Layan Al Fatayri, Virtual, January 19, 2025.

³⁵³ Raymond (Rony) Joseph ARAYGI holds a Lebanese Master’s in Law and a Diploma of Higher Studies (DES) in Private Law from Saint Joseph University—Beirut. Admitted to the Beirut Bar in 1989, Rony is the Managing Partner of ARAYGI & MAALOUY LAW FIRM, established in 1998. Since then, he has been involved in numerous commercial, corporate, fiscal, taxation, and criminal matters. Rony has also participated in international and local arbitrations, both ad hoc and institutional, including under the Rules of the ICC International Court of Arbitration, the Dubai International Arbitration Center (DIAC), and the Lebanese Arbitration and Mediation Center (LAMC), handling a variety of matters such as post-M&A, distribution, construction, joint ventures, and intellectual property. Rony served as Lebanon’s Minister of Culture from February 2014 to December 2016 and received the French civilian distinction of “Commandeur des Arts et des Lettres” in 2016.

³⁵⁴ Raymond (Rony) Joseph ARAYGI, Interview by Layan Al Fatayri, Virtual, February 14, 2025.

expressly agreed otherwise in writing, the use of AI tools does not diminish the responsibility and accountability of any participant in the arbitration³⁵⁵.

As AI continues to transform international arbitration, the insights from arbitrators and institutional guidelines highlight the importance of a balanced approach. An approach that embraces technological advancements while safeguarding due process, fairness, and professional integrity. While some arbitrators advocate for proactive engagement with AI, others remain cautious, underscoring the need for ongoing education and awareness. Institutional guidelines, such as those issued by CI Arb, provide a structured framework, reinforcing key principles like informed AI use, risk assessment, and accountability. However, as AI tools evolve, further research and policy development will be necessary to address emerging ethical and procedural challenges. Looking ahead, the arbitration community must work collaboratively to establish best practices, promote AI literacy, and develop adaptive legal frameworks that ensure AI enhances, rather than undermines, the legitimacy and effectiveness of arbitral proceedings across all forms of international arbitration, including inter-state, international investment, and international commercial arbitration.

III. Conclusion

This thesis examined the role of AI in international arbitration, focusing on inter-state, international investment, and international commercial arbitration. Through surveys and interviews with arbitrators, the research has identified the current applications of AI, its advantages, limitations, and potential future developments.

The study reveals that AI is increasingly seen as a valuable tool in arbitration, improving efficiency, accuracy, and cost-effectiveness, particularly in tasks such as document review, legal research, and case management. However, concerns remain about the transparency of AI decision-making processes, its ethical implications, and the potential destruction of arbitrators' autonomy. While AI can assist, it should not replace human judgment in the core elements of arbitration. The findings suggest that AI should be integrated into the arbitral process with caution and balanced oversight to ensure it enhances rather than diminishes the integrity of the procedure.

In terms of existing regulatory frameworks, this research acknowledges the regulations that have already been put in place to guide AI's use in arbitration. However, these regulations still require further development in order to address emerging challenges and ensure the ethical, transparent, and procedurally sound use of AI in arbitration. In this respect, the findings of this thesis support the development of a balanced regulatory framework that combines flexible guidance with targeted binding safeguards, ensuring both adaptability and legal certainty in the use of AI within arbitration. In particular, clearer guidance is needed on the disclosure of AI involvement in the preparation of submissions, the assessment of evidence, and potentially even the drafting of

³⁵⁵ “Ciarb | Launch: Ciarb Guideline on the Use of AI in Arbitration (2025).” 2025. Ciarb.org. 2025. <https://www.ciarb.org/news-listing/launch-ciarb-guideline-on-the-use-of-ai-in-arbitration-2025/>.

awards. Further safeguards are also necessary to address issues of algorithmic bias, confidentiality, and transparency, as well as the evidentiary difficulties that may arise where a party seeks to prove the improper use of AI in arbitral proceedings. In addition, greater attention should be given to the possible impact of AI use on the enforceability of arbitral awards, procedural fairness, and the allocation of costs and billing, where AI significantly alters the way legal and arbitral work is performed. In this context, the increasing use of AI may raise important questions regarding the validity and enforceability of arbitral awards. As noted in the article written by Prof. Dr. Adam Boóc, there is a recognized equivalence between the grounds for setting aside arbitral awards and the grounds for refusing their recognition and enforcement. This relationship is generally reflected in international arbitration frameworks.³⁵⁶ In this respect, concerns may arise where the use of AI is perceived to have affected due process, including the right to be heard or the fairness of the proceedings. Where AI tools influence the assessment of evidence or the reasoning of the tribunal, parties may argue that the decision-making process has been compromised. This, in turn, may lead to challenges to arbitral awards, which could ultimately affect their enforceability in other jurisdictions. Furthermore, differences in how national courts approach the recognition of annulled awards may lead to inconsistent outcomes in cross-border disputes. This highlights the importance of ensuring that AI is used in a transparent and controlled manner, with clear limits on its role in the decision-making process.

This study contributes to the theoretical discourse on AI in international arbitration, highlighting its implications for procedural fairness and legitimacy. It also has practical relevance, offering guidance for arbitrators and policymakers on how to navigate the challenges of AI integration in a way that aligns with the core principles of arbitration, including neutrality, confidentiality, and flexibility. Despite the insights provided, this research has limitations, including the relatively small sample size of interviewees and the fast pace of AI advancements, which may lead to new developments not covered in the study. Future research could explore the long-term implications of AI in arbitral decision-making, investigate the impact of AI on human arbitrators' roles, and continue to monitor the evolution of regulatory standards for AI in international arbitration.

In conclusion, AI presents exciting opportunities for the future of international arbitration, but its adoption must be approached thoughtfully and with caution. While AI can significantly enhance efficiency and accessibility in arbitration, it is crucial to ensure that its use remains aligned with the fundamental principles of the arbitration process. As AI technology advances, the arbitration community must be proactive in shaping its role to ensure it serves the interests of justice and fairness. In other words, this thesis demonstrates that international arbitration is not confronted with a choice between tradition and innovation. Rather, it faces the responsibility of integrating both. Artificial intelligence will continue to reshape procedures, redefine professional roles, and transform the management of disputes. Yet these developments must unfold within a framework that safeguards the core values of arbitration: fairness, transparency, accountability, and human judgment.

³⁵⁶ Á. BOÓC: Theoretical Observations on the Setting Aside of International Commercial Arbitration Awards. *Romanian Arbitration Journal*, 19 (2025) No. 3. 73 – 88. pp.

The future of international arbitration, therefore, is not one in which machines replace arbitrators, but one in which technology strengthens human decision-making. In this sense, the evolution of arbitration from tradition to innovation is not a break with the past, but a continuation of its historical mission: to adapt to change while remaining faithful to justice.

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