# TRANSFORMING ARBITRATION

## Exploring the Impact of AI, Blockchain, Metaverse and Web3

Edited by
MAUD PIERS
and
SEAN MCCARTHY

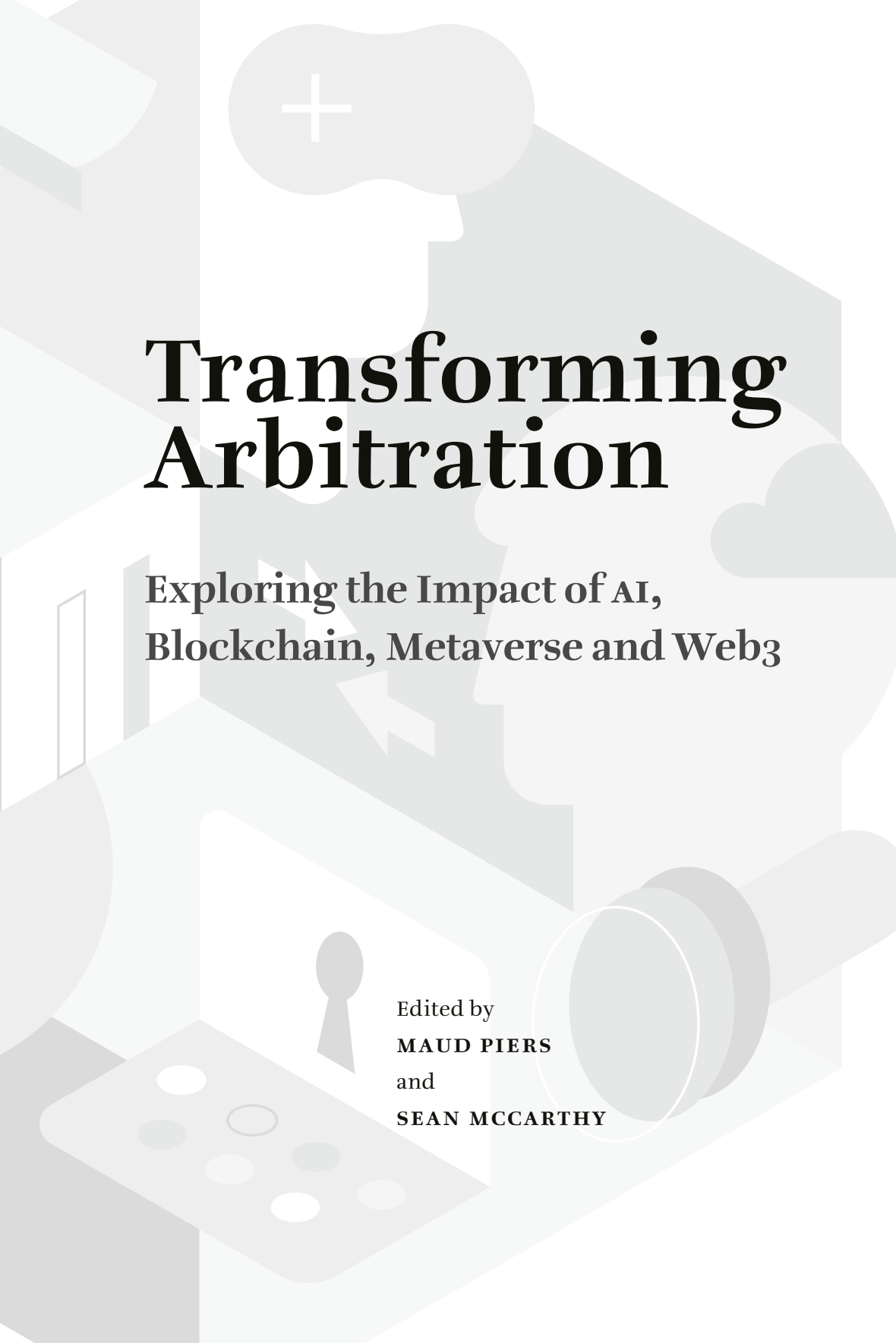
RADBOUD UNIVERSITY PRESS

# TRANSFORMING ARBITRATION

## EXPLORING THE IMPACT OF AI, BLOCKCHAIN, METAVERSE AND WEB3

# Transforming Arbitration

## Exploring the Impact of AI, Blockchain, Metaverse and Web3



Edited by
**MAUD PIERS**
and
**SEAN MCCARTHY**

**Transforming Arbitration. Exploring the Impact of AI, Blockchain, Metaverse and Web3**

Published by RADBOUD UNIVERSITY PRESS
Postbus 9100, 6500 HA Nijmegen, The Netherlands
www.radbouduniversitypress.nl
radbouduniversitypress@ru.nl

Design: Andre Klijsen
Cover image: Logo for the ArbMetaBlock2023 Conference at Ghent University, held on May 26, 2023, designed by Marlies Verschueren
Print and distribution: Pumbo.nl

ISBN: 9789465150222
DOI: 10.54195/FMVV7173
Free download at: www.radbouduniversitypress.nl



**RADBOUD UNIVERSITY PRESS**

# Table of Contents

# Preface

SOPHIE NAPPERT

The topics treated in this book prompt important thinking about the foundational structures underpinning international dispute resolution. That current technology is disruptive of international arbitration is a truism. That this disruption demands no less than the complete re-assessment of certain first principles, and of what it now means to be a lawyer and an arbitrator is, I would argue, an imperative call for our field in modern times. Technology is offering the opportunity to re-write the rules and concepts underpinning cross-border dispute resolution, and to make the process more accessible and less convoluted; in other words, fitter for the purposes of 21st century commerce.

Some of the questions that arise include: the role of the rule of law and its respect for the dignity of human agency, and the place of that dignity in a coded environment; the intervention of human intelligence in the application of legal rules, as opposed to their mechanistical utilization; the displacement of human intelligence when algorithmic systems enter the field of law; the place of knowledge, and legal knowledge, as distinguished from the information and data that is processed and repurposed by algorithmic tools; the tension between the promise of more speed, better accuracy in the digestion of voluminous data, on the one hand, with, on the other hand, the time reliance and biases that come with the human factor in decision-making.

It is a privilege to write the preface of this book, and a tall order to address such big questions in a manner that does them justice. In this preface I aim to do no more than share a few observations on the phenomena that are the development of the Web3 economy and the meteoric rise of artificial intelligence. I would like to outline some of the synapses that these phenomena create with governance and the rule of law, more specifically with international arbitration as a tool for governance and as an instrument for upholding the rule of law.

The role of international arbitration as an instrument for the guardianship and application of the rule of law has long been recognised.[1] It is part of the "human element" of governance and the rule of law, which a school of scholarship on legal philosophy terms "thoughtfulness and the rule of law". This school of thought posits that human beings "*want to be ruled thoughtfully. Or, to put it in a democratic idiom, we want our engagement in governance to be thoughtful and reasoned, rather than rigid and mechanical*."[2] The rule of law, a "*value-laden concept*", "*expresses a powerful commitment to dignity and respect for the dignity of human agency in the forms and procedures it requires for law*."[3]

This is an ethos that resonates particularly strongly in the 21st century, an era in which it can be tempting to view human attributes as overtaken by lightning technological advances and, as a result, found wanting.[4]

This sentiment is exacerbated by the feature of anthropomorphism that sits at the core of generative AI and large language models (LLMs). To the human mind, the LLMs' ability to "speak human", and to "understand" conversational prompts, acts as a powerful (albeit false) indicator that there must also be human intelligence, human understanding, and human logic at work behind the algorithmic rhetoric. The UK Bar Council, in its 2024 guidance on generative AI, ranks this feature first in the list of key risks inherent in LLMs: "[*LLMs*] *are designed and marketed in such a way as to give the impression that the user is interacting with something that has human characteristics. One of the mechanisms by which this is sought to be achieved is by the use of anthropomorphic language to describe what is happening. Perhaps the most obvious example of this is the use, by OpenAI, of the word 'Chat' in the name of its LLM products (ChatGPT). As set out above, LLMs (at least at the current stage in their development) do not have human characteristics in any relevant sense*."[5] Specifically, a large language model "*is not a conventional research tool, it does not analyse the content of data and it does not think for itself*."[6]

Relatedly, it has been observed that, in parallel with the LLMs' conversational ability, the AI innovation market is driven by the "displacement of human judgment", that is, the delegation to algorithmic tools of tasks that historically relied on human intelligence and decision-making: "*In the domain of law, autonomous machine decision-making is transforming adju-*

*dication. Technologies range from automated compliance and monitoring software that reports breaches of contracts, to chatbots and other natural language interfaces that automatically fill out and in some cases file legal documents, to a range of automated dispute resolution systems (e.g., online "blind bidding" to reconcile competing confidential settlement offers, automated negotiation software using AI to calculate dispute resolution outcomes that maximise the preferences of both sides, and customised automated systems designed to resolve customer to customer and customer to corporation disputes).*"[7]

In time, one could foresee the "displacement" of human judgment veering into the "outsourcing" of that judgment to AI tools. Putting aside the important societal implications of dehumanising the exercise of legal judgment (i.e., ridding the exercise of judgment from intrinsic attributes such as empathy, solicitude, forbearance), the potential consequences of outsourcing (even only some) legal decision-making to artificial intelligence as regards the application of the rule of law by international tribunals are worth pondering. One salient question is what would remain of the "thoughtfulness" element of the rule of law in that construct.

When looking at international arbitration as an instrument of the rule of law, it is important to recall that the rule of law rests on pillars of procedural and institutional values. Thus tenets such as procedural due process, "*the independence of the judiciary, the responsibility of the legal profession, and the care and impartiality with which courts approach questions of evidence, argument, and proof*"[8] are part of the fabric of the rule of law and of its "thoughtful" application: "*In this regard, too, law has a dignitarian aspect: it conceives of the people who live under it as bearers of reason and intelligence.*"[9]

This brings to the fore the question of the time factor inherent to the "thoughtful" application of the rule of law. Procedural due process contributes prominently to the time-consuming aspects of international arbitration. I have argued elsewhere that due process as currently conceived of and applied also sits uneasily with the values of the actors of the Web3 economy: the instantaneousness of transactions, immediacy of outcome,

and trust in dispute management by a community of one's peers rather than by an institutional, centralised decision-making body.[10]

Algorithmic tools, large language models and the automation of legal processes by way of smart contracts are being deployed as a means of streamlining the dispute process, with the laudable view of providing cheaper, more accessible justice. It is a valid question to ask in what manner this affects the application of the rule of law, weighing the place of "thoughtfulness", on the one hand, and expedient effective justice, on the other.

In closing, let me say a word about knowledge. Epistemology tells us that the concept of knowledge requires someone who knows – historically a human being. Knowledge also "*has the function of focusing our attention on what we do not know*".[11]

As regards legal knowledge more specifically, it has perceptively been stated that the law "*is not a body of knowledge that can be reduced to propositions or rules; its primary object is not truth, as if it were a kind of science, but justice. Legal knowledge is an activity of mind, a way of doing something with the rules and cases and other materials of law, an activity that is itself not reducible to a set of directions or any fixed description*."[12]

This begs the question whether legal knowledge is amenable to coding. Does the code "know" anything? Because algorithms can perform certain tasks beyond human capability, it is tempting for the human to answer that question in the affirmative. However, knowledge and the immutable storage of information are not the same. Knowledge and data sorting are not the same. Crucially (as things currently stand), the code does not know what it does not know, and the code does not factor in a notion of justice.

What constitutes "justice" in the Web3 economy and whether this is an economy that will embrace a new concept of justice that finds it worthwhile to trade in the rule of law for immediate, automated outcomes are important questions for future consideration and development.

For the time being, however, so long as we consider it worthwhile for the rule of law to continue to have a place in modern society, alongside the tremendous advantages offered by technology, then the last kilometre

must remain human. Emerging regulation, such as the EU's AI Act,[13] aims to provide us with the processes that will enable this.

Perhaps the true challenge for dispute resolution in the 21st century is to deliver a carefully balanced process that retains the thoughtful, human-centric application of the rule of law whilst at the same time producing prompt, accurate justice.

## Notes

1 Neuberger, Lord David. "History of the Rule of Law and International Arbitration", ICC Dispute Resolution Bulletin 2023-3. *See also* Nappert, Sophie. "International Arbitration as a Tool of Global Governance: The Use (and Abuse) of Discretion" in Brousseau, Glachant, Sgard, eds, *The Oxford Handbook of Institutions of International Economic Governance and Market Regulation* (2019).

2 Waldron, Jeremy. *Thoughtfulness and the Rule of Law*, Harvard University Press (2023), 11 (hereafter, Waldron).

3 Waldron, 4.

4 Spaulding, Norman W. "Is Human Judgment Necessary?" in Dubber, Pasquale, Das, eds, The Oxford Handbook of Ethics of AI, Oxford University Press (2020), 374, 389-390 (hereafter, Spaulding).

5 Bar Council of England and Wales, "Considerations when using ChatGPT and generative artificial intelligence software based on large language models", issued on 30 January 2024. Available at https://www.barcouncilethics.co.uk/documents/considerations-when-using-chatgpt-and-generative-ai-software-based-on-large-language-models/. See also Spaulding, 376.

6 *Ibid*.

7 Spaulding, 386 (footnotes omitted).

8 Waldron, 4.

9 Waldron, 172.

10 Nappert, Sophie. "Twenty-First Century Arbitration: The Question of Trust" in Bédard, Pearsall, eds, Reflections on International Arbitration: Essays in Honour of Professor George Bermann, Juris Publishing (2022), Chapter 24. Available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3956155

11 White, James Boyd ."Legal Knowledge" (2002) Harvard Law Review 115:1396, 1399 (hereafter White). See also Nagel, Jennifer. Knowledge: A Very Short Introduction, OUP (2014).

12 White, *ibid*.

13 Available at https://www.europarl.europa.eu/doceo/document/TA-9-2024-0138_EN.pdf

# Introduction

MAUD PIERS AND SEAN MCCARTHY

This book is a compilation of the fruit of the intellectual exchange and contemplation nurtured during the ArbMetaBlock2023 Conference at Ghent University, held on May 26, 2023. This conference was organized by the Center for the Future of Dispute Resolution in collaboration with NautaDutilh and Nater Dallafior, and sought to explore the evolving landscape of dispute resolution and to deliberate on how new technologies like blockchain, the metaverse and artificial intelligence (will) impact arbitration as a prominent form of alternative dispute resolution. Through our discussions, it became evident that there is an urgent need to prepare for these forthcoming changes and to gain clarity on the strategies necessary for navigating them effectively. Furthermore, profound questions arose regarding the extent to which these emerging technologies challenge established procedural and arbitration norms. It became apparent that a thorough and nuanced discourse on the implications of these technological advancements for the field of dispute resolution, particularly arbitration, is imperative. This realization sowed the seeds for this volume, which aims to explore the transformative potential of these technological advancements for law, legal practice, and the arbitration landscape.

This book sheds light on the practical applications of blockchain, the evolving concept of the metaverse and Web3, and the implications of artificial intelligence (AI) for arbitration procedures. It demonstrates, for instance, that blockchain is no longer a distant concept but a tangible reality, and that disputes arising from transactions involving cryptocurrencies, NFTs, and more, necessitate a tailored approach. Furthermore, it explores the opportunities arising from new technologies such as AI and the metaverse for arbitration procedures, often overlooked yet significant. Several chapters delve into the complexities and challenges presented by these innovative technologies. A recurring question throughout the various chapters is whether traditional, analogue approaches are equipped to embrace these opportunities and address these challenges while upholding the values upon which mechanisms like arbitration are founded. In

the spirit of rigorous academic inquiry, this book dares to challenge established norms and envisages the evolving role of arbitration in an era of rapid digital transformation.

The authors of this book encompass a diverse array of thought leaders, spanning from academics to attorneys, in-house lawyers to policymakers, and arbitrators. Each brings a unique perspective to the table, contributing a crucial piece to the puzzle essential for a deeper understanding of the evolving arbitration landscape in the digital age.

Nino Sievi and Viola Donzelli commence this book in a fitting manner by posing a crucial question: Is there such a thing as crypto arbitration? Drawing on their research into a series of public cases and providing an account of selected cases from their own practice, they convincingly establish the existence of what they call 'crypto arbitration'. They primarily explore how conventional arbitration methods effectively resolve these crypto disputes, shedding light on the peculiarities and recurring challenges they entail.

Cemre Kadioğlu Kumtepe continues this investigation by delving into the wider concept of blockchain arbitration and further clarifies the distinction between traditional off-chain arbitration for blockchain disputes and innovative blockchain dispute resolution mechanisms. In her chapter, another highly relevant question comes to the fore, namely whether and to what extent blockchain dispute resolution mechanisms, despite being oftentimes labelled as 'arbitration', deviate from traditional arbitration practices and established notions of due process. A central focus of this chapter lies in assessing the impact of blockchain arbitration mechanisms on enforceability. Cemre also extensively delves into the critical question of how due process influences enforceability, particularly in scenarios where the automatic execution of awards is coupled with party anonymity. She further explores the extent to which due process remains or should remain a pivotal consideration and questions whether automatic execution, without adherence to due process norms, can truly align with current justice standards. This chapter not only underscores the nuanced complexities within blockchain arbitration but also raises fundamental questions about the evolving landscape of due process and justice within this innovative realm.

In Chapter 3, Matthias Lehmann further explores this discussion, emphasizing the transformative impact of both blockchain and artificial intelligence on arbitration, and their implications for the longstanding status, within the international arbitration community, of the New York Convention. His point of departure is that blockchain arbitration introduces a paradigm shift, enabling a global community of users to serve as arbitrators, while AI poses the intriguing possibility of supplanting human arbitrators with algorithmic decision-making. Lehmann's inquiry revolves around a pivotal question: are decisions made through current blockchain arbitration or AI models compatible with the New York Convention, warranting recognition and enforcement within its framework? This fundamental query is intertwined with an examination of another development: the potential for self-enforcement through mechanisms like smart contracts, which autonomously execute decisions. Lehmann scrutinizes these mechanisms and their complexities, aiding in forming a stance on whether a different framework, distinct from the NYC, may be necessary.

Professor Crenguta Leaua, Mihaela Apostol & Ekaterina Oger Grivnova explore the opportunities and challenges that the development of the metaverse and on-chain digital assets pose to classic legal concepts.

In Chapter 4, Crenguta Leaua focuses on the transformative impact of the metaverse on our understanding of (the legal) reality and its implications for the diverse array of metaverse 'protagonists', including creators, avatars, and observers. She highlights the necessity of adapting our legal frameworks to accommodate this complex digital reality, currently still operating under a hybrid of laws rooted in the natural world, but which diverges significantly from its physical counterpart. Crenguta also delves into the multifaceted identities and roles of humans and players (some of which are AI-based) within the metaverse, probing how these dynamics challenge traditional arbitration laws. Furthermore, she examines how the coexistence of the physical world alongside the metaverse, as well as the presence of multiple sub-realities within it, disrupt conventional legal paradigms. This chapter underscores the imperative of embracing and navigating the complexities of the metaverse within our evolving legal landscape and advocates for a nuanced, multidimensional approach to legal thinking.

Following on from that and in her chapter "Metaverse and Private International Law: Challenges in Determining Governing Law," Ekaterina Oger Grivnova highlights how the Metaverse's lack of physicality disrupts traditional Private International Law (PIL) processes, particularly in determining applicable laws. She explores the challenges in determining the governing law, focusing on issues related to contractual and non-contractual obligations within the metaverse, such as contractual arrangements between users and platforms, as well as tort disputes covering personal offenses and intellectual property infringements. Ekaterina discusses the difficulties in classifying these issues and the ambiguity in selecting applicable PIL rules, exacerbated by the diverse legal recognition of digital assets across jurisdictions. Ekaterina concludes by emphasizing the inadequacy of traditional PIL frameworks in addressing the complexities of the metaverse, and underscores the need for new legal frameworks and potentially even a 'lex metaversia' to navigate the emerging complexities.

Mihaela Apostol delves further into another aspect of Private International Law, examining the challenges of determining jurisdiction in cross-border disputes involving digital assets. Defining digital assets broadly, including cryptocurrencies and virtual land, she further highlights the escalating frequency of such disputes. She also reflects on the evolving legal landscape through an analysis of various court cases from different legal systems, focusing on common issues like tort matters, regulatory issues, and contractual disputes. These cases are meant to illustrate the clash between the territorial nature of courts' jurisdiction and the inherently delocalized nature of digital assets presenting a series of legal questions, including on jurisdiction ratione materiae, personae, and loci. Like Ekaterina, Mihaela advocates for clearer, harmonized legal frameworks, to address jurisdictional challenges in digital asset disputes, highlighting ongoing initiatives like the Law Commission of England and Wales' research paper on digital assets and conflict of laws, and discussing the role of soft law citing the UNIDROIT Principles on Digital Assets on Private Law 2023 as a notable example.

In her chapter, Amy J. Schmitz takes a step back and stresses the importance of a cautious approach to integrating technology. She examines the rise of what she calls OArb, a term used to define arbitration that integrates the use of technology to facility the procedure, and explores its

potential to improve access to justice. More specifically, she delves into the roles of AI, blockchain, and the metaverse in arbitration, discussing their respective benefits and challenges. With AI, she emphasizes the need for responsible implementation to address concerns like bias and privacy. Regarding blockchain, she explores its potential for transparent and decentralized dispute resolution systems. In the metaverse, she examines the possibilities of virtual arbitration hearings and the associated challenges. Amy advocates for a holistic approach to integrating technology in arbitration, emphasizing clear goals, stakeholder involvement, contextual understanding, appropriate structures, resource allocation, and accountability. She underscores the importance of technology complementing the core principles of arbitration rather than overshadowing them.

The questions raised in the preceding chapters also resonate with policymakers. In Chapter 8, Takashi Takashima discusses how advancements in technology not only require arbitrators to have a deeper understanding of technical intricacies but also to raise concerns regarding the efficiency and fairness of dispute resolution processes. This has prompted the United Nations Commission on International Trade Law (UNCITRAL) to undertake initiatives aimed at addressing the challenges posed by digitalization in dispute resolution. Specifically and first of all, Takashi explores two ongoing projects within UNCITRAL: the legislative work conducted by Working Group II on technology-related dispute resolution and adjudication, and the project focused on assessing developments in dispute resolution within the digital economy (DRDE project). Through an analysis of these initiatives, Takashi provides valuable insights into how UNCITRAL is poised to balance the utilization of digital technologies in dispute resolution, ensuring that traditional norms are upheld as necessary safeguards while embracing technological advancements to foster a more efficient and equitable international trade law landscape. How this should be done has recently been the subject of intense debate, and opinions are divided. For example, should the New York Convention be amended to address the requirements for the recognition and enforcement of electronic awards? Takashi notes that this is under discussion and that WGII is working towards creating greater legal certainty on this matter, thereby supporting digitalization.

Dirk Van Gerven and Aija Lejniece discuss the impact of digital technology on the legal profession, emphasizing the need for adaptation. Dirk Van Gerven explores the use of software tools in legal work, highlighting the importance of human oversight to ensure accuracy and avoid legal liabilities. Dirk addresses professional codes of conduct in the digital age, focusing on confidentiality and ethical standards in lawyer-client communications. He also examines the concept of digital legal entities and the potential role of artificial intelligence in legal proceedings and makes us wonder about whether the future will be one in which there are digital clients and digital lawyers. Dirk concludes by advocating for modernization. He points out the obligation of the state to update the judicial system, but also emphasizes the need for lawyers to embrace digital literacy and continued education necessary to navigate the evolving landscape of the legal profession in the digital era.

The final chapter, written by Aija Lejniece, offers a clear and practical roadmap for law firms to effectively manage the growing role of AI in their operations. She not only outlines how firms should structure this integration but also introduces nine concrete AI governance principles for firms to adhere to. Lejniece places these principles in the context of current regulatory frameworks and explicitly references this backdrop, providing a strong foundation for responsible AI use and countering the dystopian concerns some have raised – with a nod to Asimov's laws. She further examines how existing ethical standards address the professional use of AI by lawyers, offering thoughtful insights into the ethical challenges involved. Her proposals for good governance are both practical and actionable, grounded in the latest developments and regulatory initiatives.

These final two chapters serve as the perfect conclusion to the book, inviting readers to engage in concrete reflection on the evolving legal landscape. What sets them apart is their immediate applicability, as they offer actionable recommendations that practitioners can implement right away. By grounding discussions in existing initiatives and real-world scenarios, they bridge theory with practice, making them particularly resonant. As such, they not only underscore the significance of the preceding chapters but also serve as a call to action, urging readers to consider how they can adapt and thrive in the ever-changing legal profession.

This book stands as a testament to the collaborative efforts of a group of esteemed thought leaders committed to pushing the boundaries of dispute resolution through meticulous analysis and insightful discourse. Each chapter, enriched by the diversity of its authors, offers a distinct perspective and a wellspring of ideas that propel us toward a future where the fusion of technology and tradition may shape a more adept dispute resolution arena. Our aspiration is that the insights shared by these authors will not only deepen your understanding but also ignite your curiosity for further exploration and encourage your contributions to innovation within the field. With this in mind, we wish you both enjoyment and intellectual enrichment as you delve into these pages.