

Into the Future with Eyes Wide Open: International Arbitration in the Digital Age

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Technological developments have long had a major impact on the practice of international arbitration. The progression of technological advances in this practice has already provided indisputable benefits, empowering panels and lawyers to handle increasingly complex disputes more quickly and efficiently. However, important issues arise, particularly with regard to procedural fairness and due process. Major institutions such as the International Chamber of Commerce (ICC) and Chartered Institute of Arbitrators (CI Arb) have developed guidelines and recommendations designed to help the international arbitration community address potential risks in these areas. This article considers Marshall McLuhan's analytical method to dig deeper into the impact of technological advances. The future promises more breakthroughs, and professionals are advised to remain aware of how they can inadvertently adapt their thinking and behaviour to risks in procedural fairness and due process.

Keywords: arbitration, IT, legal tech, ICC, CI Arb, AI, due process, virtual hearing, McLuhan

1 INTRODUCTION

Technological advance does not wait, and it impacts dramatically on every field of human endeavour. International arbitration is no exception. Considering the possible size of the market, the impact cannot be overlooked.¹ Given the considerable amount written on this topic, it clearly has not.²

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¹ It is impossible to exactly calculate the size of the market. However, Global Arbitration Review, estimated the 'total value' of the pending cases of their top thirty ranked firms to be over USD 2 trillion, which if one assumed fees to be 10% of the total value of the pending cases, would value the international arbitration market at roughly USD 20 billion.

² See e.g., Henk Snijders, *Arbitration and AI, from Arbitration to 'Robotration' and from Human Arbitrator to Robot*, 87(2) *Arb. Int'l J. Arb. Mediation & Disp. Mgmt.* 223–242 (2021); Nika Madyoon, *Virtual Hearings in International Arbitration: Challenges, Solutions, and Threats to Enforcement*, 87(4) *Arb. Int'l J. Arb. Mediation & Disp. Mgmt.* 597–611 (2021); Ben Giaretta, *What Will Arbitration Look Like in a Future Virtual World?*, 85(4) *Int'l J. Arb. Mediation & Disp. Mgmt.* (2019).

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'Legal tech' has been a buzzword in the legal industry for some time now. It means different things to different people. My working definition would include all things designed to integrate technological advances into the provision of legal services. My focus specifically shall be legal tech as it pertains to the practice of international commercial arbitration. For the purposes of this article, I will adopt the definition put forward by the ICC:

The concept of information technology ("IT") is broad enough to encompass all electronic means to produce, modify, capture, store, transmit, and display information. In international arbitration, the use of IT can include, for example, (i) email and other electronic communications between and among the parties, the arbitrator or arbitrators (the "tribunal"), and the administering body; (ii) storage of information for access by the parties and the tribunal using portable or fixed storage media (e.g. flash drives, DVDs, hard drives, and cloud-based storage); (iii) software and media used to present the parties' respective cases in an electronic format, rather than a paper format; and (iv) hearing room technologies (e.g. videoconferencing, multimedia presentations, translations, and "real time" electronic transcripts).³

This article will survey the various stages of tech advances in this field as well as some of the latest trends. I will briefly discuss some of the issues that have arisen and then examine some of the latest guidance issued by leading organizations such as ICC and CIArb, designed in part to address the concerns of practitioners. I will conclude with some reflections on the current state of play and possibly raise some issues that might merit further reflection.

2 BACKGROUND OF LEGAL TECH

Many claim that digitalization is the future of international arbitration and that the use of technology by arbitration centres not only enhances case management efficiency but also reduces costs and time for the parties, without compromising security or confidentiality.⁴ It is also argued that it dovetails nicely with efforts to achieve a more sustainable arbitration, by reducing its environmental footprint. Still others are somewhat circumspect on the question. While it is hard to deny the utility of any advance that can make the job easier, some commentators are more wary than others.

One could view the development of legal tech in international arbitration in stages. These stages are meant to be seen as conceptual as they are not necessarily sequential. They overlap in time and in a sense run concurrently. Clearly, stage 1 (or first generation) innovations continue to update and improve, as stage 2 and stage 3 innovations come on line, so to speak.

³ See *The ICC Commission Report: Information Technology in International Arbitration*, ICC Publication 882-1 (2017) (ICC Report).

⁴ Aranya Chatterjee & Sharique Uddin, *Online Dispute Resolution: An Effective Mechanism and an Alternative Tool for Justice at a Reasonable Time*, 87(4) *Arb. Int'l J. Arb. Mediation & Disp. Mgmt.* 529-549 (2021).

The first generation could be considered to include the initial introduction of legal tech into the work of practitioners. By this I refer to the introduction of email filings, online databases, subscription services, digital translation services, eDiscovery, virtual data rooms, digital case management tools, and the like. I think it is fair to say that these innovations have been very much welcomed, reducing time and cost as they do by greatly assisting case preparation and management. Practitioners, arbitral centres, and arbitrators have reaped immediate benefits from these innovations.

The second generation would include the introduction of cloud-based services and streaming that allowed for viable (and secure) virtual hearings and case management conferences. One could say that the 2020 pandemic-related confinement measures helped accelerate the integration of this tech into everyday practice. Today it is not uncommon for arbitrators to hear cases from anywhere in the world. The cost reduction in travel expenses alone made this an irresistible innovation. And the tech continues to improve, allowing for greater reliability.

The third stage involves the incorporation of artificial intelligence (AI) into the mix, at first through applications designed to help parse vast amounts of data in the context of case preparation and the evaluation of evidence or in assisting complex damage assessments. The inevitable next step is towards the actual determination of disputes. Some, such as Sophie Nappert, founder of ArbTech, would challenge the notion that this poses any sort of risk (*'We are well past the days of tongue-in-cheek futurist predictions of "robotlawyers". These days, the discussion is technical, and high-level'*).⁵ Others might not fully agree.

There are already prominent AI technologies in the legal market that provide support services, such as ROSS Intelligence⁶ and Lex Machina⁴, designed to simplify, automate, and expedite legal work. There are contract automation services (e.g., Lawlift⁷), e-discovery software (e.g., Everlaw⁸), case management applications (e.g., App4Legal⁹), information aggregators for choosing ADR neutrals (e.g., Arbitrator Intelligence and Arbitrator Research Tool (ART)),¹⁰ litigation prediction solutions (e.g., Lex Machina¹¹ and Arbilex¹²). Indeed, there all

⁵ *Technology in Arbitration: Thoughts from the 2021 ICC Prague Arbitration Day*, TransPerfect Legal Solutions – JDSupra (12 Dec. 21), <https://www.jdsupra.com/legalnews/technology-in-arbitration-thoughts-from-3513115/> (accessed 7 Oct. 2022).

⁶ ROSS INTELLIGENCE, <https://rossintelligence.com>.

⁷ <https://www.lawlift.com/>.

⁸ <https://www.everlaw.com/>.

⁹ <https://www.app4legal.com/>.

¹⁰ See <https://globalarbitrationreview.com/arbitrator-research-tool>.

¹¹ See <https://lexmachina.com/what-we-do/>.

¹² See <https://www.arbilex.co/welcome>.

already 'robot arbiters'. Take for example, Ebay's AI-driven online process for the resolution of countless customer complaints.¹³

3 CRITICS AND CHAMPIONS

Each step in this evolution has drawn both critics and champions. There are those who celebrate every tech innovation and others who resist every minute change. Both sides of the debate raise very compelling arguments.¹⁴

Data Security. On the issue of cybersecurity, some including the ICC have raised this as one of the greatest threats posed, not only because of the sensitive information in play but because of the threats to the confidentiality of proceedings. All things considered, today's case management platforms are designed with these risks in mind. Security protocols abound designed to address them.¹⁵ That said, parties located in countries with lesser information technology (IT) infrastructure may find themselves at a disadvantage for the foreseeable future.

Efficiency. IT, particularly regarding data management, can seem extremely efficient to some while posing an immense learning curve to others and prove quite inefficient. This disparity can be exploited for tactical advantage in disputes. While often a challenge for most people of my generation, the truth is that most platforms have been designed with the end-user's resources in mind. See for example the work of the joint project of Herbert Smith (HSF), CMS, Hogan Lovells, Latham, Ashurst and DLA on a Protocol for Online Case Management in International Arbitration.¹⁶

Data and Document Control. In today's international dispute resolution climate, evidence can exist in many forms, much of which is digital (e.g., email) and much of which is not. Some cases involve vast amounts of data to be parsed. Data analytics designed to eliminate duplication, organize documents related to similar issues, or mapping evidentiary requests free practitioners from hours of tedious and expensive document review. But even the most sophisticated systems

¹³ Jan Mary Baloyo, *Legal Tech in Arbitration*, The Legal Technologist (21 Sep. 2020), <https://www.legaltechnologist.co.uk/legal-tech-in-arbitration/>.

¹⁴ Riikka Koulu, *Dispute Resolution and Technology: Revisiting the Justification of Conflict Management* (Academic dissertation defended on 23 Sep. 2016) Faculty of Law, University of Helsinki, <http://www.comi.fi/julkaisuja/koulu1.pdf>.

¹⁵ See e.g., *ICCA-NYC Bar-CPR Cybersecurity Protocol for International Arbitration 2022*, https://www.cpradr.org/resource-center/protocols-guidelines/icca-nyc-bar-cybersecurity/_res/id=Attachments/index=0/ICCA-NYC%20Bar-CPR%20Cybersecurity%20Protocol%20for%20International%20Arbitration%20-%20Print%20Version.pdf and guidance on data protection issues in the *ICCA-IBA Roadmap to Data Protection in International Arbitration*, https://cdn.arbitration-icca.org/s3fs-public/document/media_document/roadmap_28.02.20.pdf.

¹⁶ *Protocol for Online Case Management in International Arbitration*, by the Working Group on LegalTech Adoption in International Arbitration, Nov. 2020, <https://sites-herbertsmithfreehills.vfuturevx.com/20/21553/landing-pages/platforms-protocol—wg-on-legaltech-in-arbitration—november-2020.pdf>.

are not failsafe. And not all probative evidence can be neatly stored in a digital format. And of course, not all parties are equally resourced on this front.

Video Hearings. There has been considerable debate as to whether parties have a right to live in-person hearings. While the experience during the pandemic has worked to allay some initial circumspection in this regard, there is an intangible element to live in-person hearings that cannot be replaced. But some would argue that high-definition video might be even better as it can magnify facial expressions and other body language indicators. While perhaps so, differences in infrastructure between parties can raise the spectre of undue advantage.

Wider Pool of Resources. Remote access to essential support services such as experts, translators or interpreters can accelerate proceedings and reduce costs. But can this provide an unfair advantage to the better resourced party? Or does it level the playing field?

Reduction of Carbon Footprint. The reduction in travel and photocopies alone promises a more sustainable process. But some might question whether this should ever be an important consideration against fundamental fairness and a party's right to fully present its case.

4 DUE PROCESS AND PROCEDURAL FAIRNESS

Perhaps a common thread running through all of the issues outlined above is the greatest threat posed by IT to international commercial arbitration: namely, its implications for due process and procedural fairness. There is no single definition of 'due process' in international arbitration.¹⁷ The United Nations Commission on International Trade Law (UNCITRAL) Model Law¹⁸ (the Model Law) (Article 18), which forms the basis of the domestic arbitration laws of more than 115 jurisdictions, for example, provides that 'the parties shall be treated with equality and each party shall be given a full opportunity of presenting its case'.¹⁹ The duty for arbitrators to act fairly and even-handedly finds expression in most major institutional rules.²⁰

One question that has already begun to emerge in the IT context is whether due process requires a right to a live oral hearing. More particularly, whether due process is breached by a tribunal's order that a hearing take place remotely rather than in person.²¹ In July 2020, the Austrian Supreme Court upheld a tribunal's

¹⁷ See generally G. Born, *International Commercial Arbitration* (3d ed., Kluwer Law International 2021).

¹⁸ *UNCITRAL Model Law on International Commercial Arbitration (1985), With Amendments as Adopted in 2006*, https://uncitral.un.org/en/texts/arbitration/modellaw/commercial_arbitration/status.

¹⁹ See generally Ilias Banteka, *Equal Treatment of Parties in International Commercial Arbitration*, 69 *Int'l & Comp. L.Q.* 991–1011 (Oct. 2020).

²⁰ Article 22(4) of the 2021 ICC Rules; Art. 17.1 of the 2013 UNCITRAL Rules.

²¹ See e.g., *Municipio de Mariana and others v. BHP Group* [2020] EWHC 928 (TCC) [High Court of England and Wales].

decision not to postpone a scheduled hearing but to proceed remotely instead, noting that videoconferencing technology can ensure effective access to justice and enable the parties to exercise their right to be heard, whereas insisting on an in-person hearing during the pandemic would stall the proceedings.²²

Clearly, the due process issues arising from IT usage go beyond virtual hearings. Due process encompasses the principle of equality of arms as it applies to the entirety of adversarial arbitral proceedings and not just the oral hearings. This principle requires that the opportunities afforded to both parties throughout the adversarial proceedings are fairly balanced. This 'fairness' requires that in adversarial proceedings the parties and their submissions are treated equally.

When we apply these principles to IT usage, the outcomes might not always seem so straightforward. One can foresee disputes where parties with superior IT resources might be forced to surrender their advantage to the weaker party, out of due process paranoia. As IT usage becomes more and more prevalent in international arbitration, tribunals will be forced to closely consider the power gaps between parties in proceedings. Given this evolution, it seems reasonable to anticipate that more of such due process challenges will arise. This is discussed further in the next section on guidelines.

5 GUIDELINES

The pace of these advances is accelerating and in response organizations such as CIArb and the ICC have issued guidelines on technology and international arbitration. The ICC has done a considerable amount of work on the impact of IT on international arbitration, dating back to its first report in 2004.²³

On 18 February 2022, the ICC released their latest report: the 'ICC Commission Report on Leveraging Technology for Fair, Effective and Efficient International Arbitration Proceedings' (the 'Report') updating their 2017 report.²⁴

²² Case No. 18 ONc 3/20s (Austrian Supreme Court), discussed in M. Scherer, F. Schwarz, H. Ortner & J. Ole Jensen, In a 'First' Worldwide, Austrian Supreme Court Confirms Arbitral Tribunal's Power to Hold Remote Hearings Over One Party's Objection and Rejects Due Process Concerns, Kluwer Arbitration Blog (24 Oct. 2020). See also *Landesbank Baden-Württemberg and others v. Kingdom of Spain* (ICSID Case No. ARB/15/45), Decision of the Chair of the ICSID Administrative Council on the Second Proposal to Disqualify All Members of the Tribunal, 15 Dec. 2020.

²³ The ICC Task Force on the Use of IT in International Arbitration was formed in 2002 and produced four documents in 2004: 'Issues to Be Considered when Using IT in International Arbitration', 'Operating Standards for Using IT in International Arbitration ("The Standards")', 'Explanatory Notes on the Standards' and 'IT in Arbitration: The Work of the ICC Task Force'. The ICC updated the first of these documents ('Issues to Be Considered when Using IT in International Arbitration') in 2017.

²⁴ *ICC Commission Report, Leveraging Technology for Fair, Effective and Efficient International Arbitration Proceedings* (Feb. 2022), <https://iccwbo.org/content/uploads/sites/3/2022/02/icc-arbitration-and-adr-commission-report-on-leveraging-technology-for-fair-effective-and-efficient-international-arbitration-proceedings.pdf>.

Even a quick perusal of this report flags some of the most immediate and practical issues faced by parties and arbitrators. The conclusions and recommendations of the Report are based on the responses of over 500 members of the arbitration community, surveyed for their views on, and experience in using, legal tech tools and solutions.

The ICC's 2022 report's coverage is broad, as it seeks to distil the major issues including the relevance of technology to arbitrator selection. Indeed, an arbitrator's general duties of competence might reasonably imply a requirement to be technologically literate. The Report also addresses effective case management, as well as electronic exchange of communications, exhibits, and other submissions. In step with its recommendations, the Report provides sample procedural language relating to technological tools and solutions, an organizational checklist for virtual hearings, a template procedural order for the conduct of evidentiary hearings via teleconferencing, and a checklist of considerations when choosing online case management platforms.

The principal theme that runs through the ICC Commission's work is how to avoid letting legal tech get in the way of fairly resolving international disputes. The report emphasizes the need of the tribunal to balance its responsibility to conduct disputes with efficiency and integrity against the fundamental principles of fairness and equality. Certain parties with fewer resources, or parties based in emerging market regions, may suffer from inadequate internet infrastructure, technical ability and access to technology. These factors may thereby create a 'digital divide' and inequality of arms in disputes.

The Report very realistically addresses how the disparity between the parties as to the access and affordability of tech can impact on outcomes, and ultimately threaten the enforceability of awards. They even address the impact on cost awards, where one party might significantly outspend their adversary on IT.

For example, on the issues arising from virtual hearings, while the ICC Report supports their use due to the obvious benefits (in terms of access to witnesses, reducing costs and improving efficiency), it highlights objections raised in recent ICC cases, flagging the following in particular:

- the potential violation of due process rights, including the right to present one's case;
- technological limitations due to the participation from different locations and countries (e.g., internet access and slow speed of the connection for witnesses who may live in remote areas) and older participants potentially less technically savvy;
- confidentiality and time zone issues, limiting appropriate time slots;

- additional costs involved;
- difficulties in displaying or following evidence;
- difficulties relating to witness preparation; and
- 'screen fatigue' requiring shortened hearing days.

The guidance directs tribunals to consider fundamental principles of fairness to all parties. While each party should have a full and fair opportunity to present its case,²⁵ no party should be allowed to impose a particular IT solution to make the proceedings more difficult or expensive for another party. Thus, the tribunal might deny a request for directions to use a specific form of IT if it finds that the requesting party's preference for that solution is motivated by a desire to cause the other party to incur unreasonable costs or where the tribunal concludes that a less expensive solution would work just as well – both for the parties and the tribunal. Conversely, the tribunal also would condemn a party's attempt to complicate or obstruct the proceedings by unjustifiably resisting IT use.

Particularly where the tribunal considers whether to impose an IT solution over a party's objection, the tribunal should consider the practical implications, in addition to substantive legal and procedural concerns. For example, would the use of a particular IT solution (e.g., an internet-based document repository hosted in a certain country) force a party to violate data privacy laws to which it is subject? If the parties have disparate resources, would a requirement to use a particular solution create an unfair hardship for one party?

Similarly, the CIArb guideline²⁶ also seek to remind arbitrators of their powers about using technology.²⁷ CIArb drives home the principle (not unlike the ICC's) that the use of technology must be proportionate and legal, must not undermine the fairness of the process, and must be transparent. In addressing the arbitrator's powers the CIArb guideline states that the arbitrator's choices relating to technology form part of the duty to treat the parties with equality and to give them a full opportunity of presenting their case and the duty to carry out the tribunal's mandate and not delegate this to others.

²⁵ See Art. 22(1) of the ICC Rules requiring the tribunal and the parties to 'make every effort to conduct the arbitration in an expeditious and cost-effective manner, having regard to the complexity and value of the dispute'. See also Art. 22(4) of the ICC Rules, and the UNCITRAL Model Law, establishing that the parties have the right to equal treatment and to present their respective cases.

²⁶ *CIArb Framework Guideline on the Use of Technology in International Arbitration* (2021), <https://www.ciarb.org/media/17507/ciarb-framework-guideline-on-the-use-of-technology-in-international-arbitration.pdf>.

²⁷ Ben Giaretta, *The Future Is Now: The New CIArb Guideline on Technology in Arbitration*, (CIArb Feature 12 Nov. 2021), <https://www.ciarb.org/news/the-future-is-now-the-new-ciarb-guideline-on-technology-in-arbitration/>.

Indeed, at Article 3.5 the CIArb guideline states that:

Above all, arbitrators must decide not to use a particular technology if such use were to jeopardise due process in the arbitration.

It goes on to flag instances where arbitrators must be wary. For example, Article 3.7 considers the circumstance where the technology used privately by one party might affect the proper course of the arbitral process and/or result in unfairness for the other party: ‘for example, where the technology used by one party to store and review documents and data might not allow the arbitrators and the other party to understand whether that party has complied with a duty to disclose information’.

The CIArb guideline tackles the issues of procedural fairness directly. For example, Article 5 on ‘Fair and transparent use of technology’ states that:

5.1. Any technology used for common purposes in an arbitration must not undermine the fairness of the process and must be transparent.

The CIArb guideline alerts arbitrators to the disparities between parties in regard to language, the lack of familiarity with a technology in a party’s country, or a lack of key infrastructure. The CIArb guideline also addresses the issues of how and when IT is used (‘A hearing that is in the middle of the day for one party but in the middle of the night for another might create an unfairness for the latter party’).

Particularly interesting is the CIArb Guideline’s warning to Arbitrators to think for themselves:

5.5 But technologies which might derogate from the arbitrator’s duty to apply their minds to the arguments to reach their own decision in a case, and which might jeopardise the arbitrators’ autonomous decision-making process, such as certain analytical software, should be brought to the attention of the parties so that they have an opportunity to comment.

Where does this leave us? Both the ICC and CIArb guidelines address the here-and-now and will undoubtedly adapt as new issues emerge. They do not speculate over the future of legal tech. Nor should they. I believe we should embrace the efforts of CIArb and the ICC to issue guidelines on the use and deployment of legal tech. These are guidelines that promise to adapt to the phenomenon. But these are guidelines as to what exists today. They are only that. They are not and should not be constraints on our assessment of where legal tech is headed.

6 THE FUTURE

When pondering the future of legal tech and arbitration, the classic work of Marshall McLuhan comes to mind, particularly his observation that human consciousness evolves with technological advance. In other words, our way of thinking adapts to the technology, not the other way around.

In today's world, many 'Gen Zs' often confuse knowledge and insight with their immediate access to vast amounts of data. Why consult a doctor when your smart phone can answer almost every medical issue almost instantly, for free? I am exaggerating, but only to make McLuhan's point that the technology itself affects our thinking. Or lack thereof. I'm not sure he foresaw today's technology that often provides so much information that it feels sometimes that there's none at all. Sometimes our feeds are mere echo chambers designed by algorithms to give us only what we like to hear.

International dispute resolution does not reside beyond this world and is affected by this phenomenon like every other discipline. But because this involves dispute resolution, one might argue that participants in the process owe a higher duty of vigilance that would require participants to remain critical. To question, to challenge.

Let's take for example 'virtual hearings'. I believe these raise several questions. One concern considers the loss of that intangible quality of live face-to-face interaction between counsel, witnesses, experts and the arbitrators. Anyone who has ever had to give live testimony in court will attest to this. There is a reason behind the ceremony and discipline of the courtroom that goes beyond the prospect of being remanded into custody for a contempt or perjury citation. The liturgical quality of the procedure promotes candour.

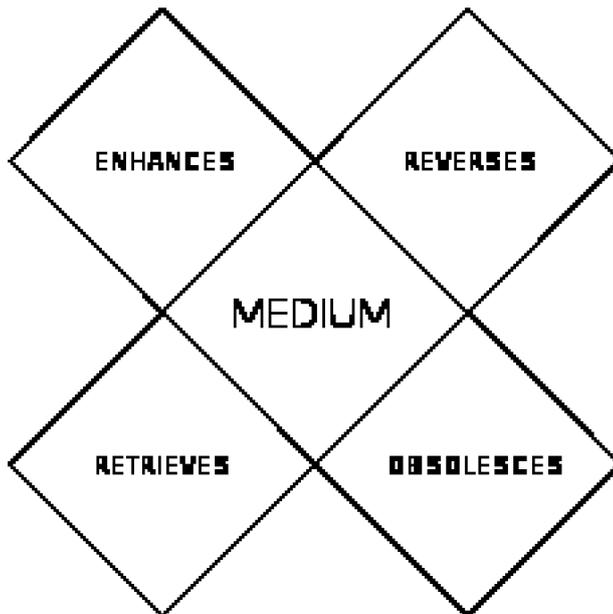
But the analysis must dive deeper. How then must we approach this issue? One approach is to consider the application of McLuhan's tetrad of technological effects to examine the effects on society of any technology. McLuhan believed that the essential message of human-made technology is found when we realize that these are 'utterings' or 'utterings' (cf. 'extensions') of ourselves, and that by learning about them we thus also learn about ourselves. These may all be analysed through his tetrad-form of four effects articulated in *Laws of Media*²⁸ (a complementary method to Aristotle's four causes: material, efficient, formal, and final).

The tetrad divides effects into four categories, phrased as questions:

- What does the tech enhance?
- What does the tech make obsolete?

²⁸ Marshall McLuhan & Eric McLuhan, *Laws of Media: The New Science* (University of Toronto Press 1988); see also Mark Federman, *On Reading McLuhan*, McLuhan Program in Culture and Technology, <http://individual.utoronto.ca/markfederman/OnReadingMcLuhan.pdf>; Francesco Guardiani, *Reviewing the Reviews: Laws of Media and the Critics*, McLuhan Studies (1996), projects.chass.utoronto.ca/mcluhan-studies/v1_iss1/1_1art5.htm; Marshall McLuhan Speaks Centennial (2011), <http://marshallmcluhanspeaks.com/>; Gregory Sandstrom, *Laws of Media and the Extension of Evolution*, www.academia.edu/1674849/Laws_of_Media_and_the_Extension_of_Evolution; William Sheridan, *The Paradigm Shift of the Information Age*, *Literary Review* (1990); Marshall Soules, *McLuhan Light and Dark*, www.media-studies.ca/articles/mcluhan.htm, SERRC TWEETS.

- What does the tech retrieve that had been obsolesced earlier?
- What does the tech flip into when pushed to extremes?



If we apply to this to virtual hearings we consider:

- Enhancement: What the tech amplifies or intensifies. How the tech presents a 'solution to a previous problem'. International arbitration is amplified and intensified by videoconference technology, which clearly enhances communication. At least one of the problems solved is the cost and time value of travel and setting up remotely for hearings and conferences.
- Obsolescence (ground): What the tech drives out of prominence. Virtual hearings reduces the importance of live hearings, live testimony, live cross examination, live opening and closing statements, etc.
- Retrieval (figure): What the tech recovers which was previously lost. How does this move a phenomenon from the periphery to the centre of attention? Virtual arbitration returns to the forefront personal contact and direct verbal communications as means of making decisions. Perhaps to a certain degree it also retrieves the

importance of the written word (written submissions, witness statements, etc.).

- Reversal (ground): What the tech does when pushed to its limits. What are the unexpected dissatisfactions the technology flips on its user to create a new problem? Might this lead to bullying (*the loudest voice wins*) or the most tech savvy wins; confusion (*who has the right to talk?*); indecision (*the talking never stops*); misunderstanding (*individual memories replace written records*). Perhaps the greatest reversal is the loss of immediacy and intimacy.

The dimension of reversal should also include the issue of a technology's impact on our behaviour, what McLuhan referred to as the self-mutilating effect of technology. Technologies are extensions of our selves. (Thus a car is an extension of our hands and feet, eye glasses an extension of our eyes, the internet an extension of our central nervous systems). One must consider how these new technologies might come to recondition our thinking. How they might come to mutilate our perceptions. How those involved in the process might become servomechanisms of the technology:

By continuously embracing technologies, we relate ourselves to them as servomechanisms. This is why we must, to use them at all, serve these objects, these extensions of ourselves, as gods or minor religions. An Indian is the servomechanism of his canoe, as the cowboy of his horse or the executive of his clock. (McLuhan 55)

Will this be the relationship of the arbitrator and arbitration practitioners with their legal tech? The idea of the servomechanism is intriguing in that it draws inspiration from the myth of Narcissus, whose infatuation with his own reflection results in his eventual transformation and condemnation to eternal servitude. Examples abound. One needs to go no further than to contemplate the generalized servitude we all have to our smart phones.

Take for example the use of certain commonplace programs we use daily. Microsoft Excel is a wonderful tool to present quantitative data. It adds, subtracts, works out percentages and currency conversions. Unfortunately, it has led many to believe that only quantitative data is important. If it doesn't fit on the Excel sheet it is either unimportant or entirely irrelevant.

PowerPoint is very useful to quickly assemble slides for presentation. Very easy to save on pen drive or even send by email. The program provides ready-made templates that users can select for the presentation of data. Ready-made text boxes, pie charts, etc. Even short videos, stock photos and other Excel sheets can be imported into the document. Gone are the days of struggling with translucent plastic sheets with handwritten notations, that would then be shuffled and placed on the overhead projector one by one in a darkened room. The drawback is that

the templates predetermine and precondition the mode and manner of presenting data. Not only is there a sameness in most business presentations, but users are severely constrained and restricted from attempting to present their presentations in any manner that might diverge from the predetermined template. Clearly, not everything can be reduced to bullet points (as the designers of power point would seem to suggest).

The great irony of our age is the way in which a device such as a smart phone, designed to facilitate communications, ultimately impedes face-to-face conversation. Few can read their feeds and talk at the same time. Connected to the whole world at the expense of the person sitting right in front of you. What then will be the effect of technology on international arbitration? How might new technologies come to mutilate the process? How might we become servants of the tools we create?

It is not entirely clear how arbitration counsel, experts and panels will adapt their behaviour to virtual hearing technology. Will counsel and experts be screen-tested before they appear or testify? Will they play to the camera? Will the more camera-friendly gain an advantage? Will lighting, sound and staging come to affect outcomes? One might consider the analogous scenario many years ago when live stage actors transitioned to the new movie industry. Some adapted well, others did not.

7 AI AND ARBITRATION

The next stage in legal tech is the inclusion of AI in arbitration. The idea is to optimize case management by obtaining rapid insight from files and identify patterns in disputes. The promise of speed at which assessments can be made and AI's low cost are hard to resist. What next? One of the most interesting initiatives is that of ArbiLex, a Harvard Law School legal tech start-up that uses AI to settle arbitrations.²⁹ ArbiLex's product is a predictive data analytics tool that leverages Bayesian machine learning (ML). The key they say to its successful use is access to experts. The implications are fascinating. A model where experts feed an AI arbitrator, to render the optimal opinion.

If we apply McLuhan's tetrad to AI:

- Enhancement: What the tech amplifies or intensifies. AI reduces costs and accelerates the assessment of evidence. It promises to solve

²⁹ Frederick Daso, *ArbiLex, a Harvard Law School Legal Tech Startup, Uses AI to Settle Arbitrations*, Forbes (4 Feb. 2020), <https://www.forbes.com/sites/frederickdaso/2020/02/04/arbilex-a-harvard-law-school-legal-tech-startup-uses-ai-to-settle-arbitrations/?sh=4e9da89852c5>.

the problems raised by the growing evidentiary complexity of international arbitration.

- Obsolescence: AI reduces the unreliability of human compilation and assessment of evidence.
- Retrieval: AI returns to the forefront the strategic role of the lawyer by freeing them from the drudgery of evidentiary review.
- Reversal (ground): What the tech does when pushed to its limits. The possibility exists that the practitioner is reduced to data entry. In a world where AI analyses data and renders its decision, the lawyers, experts, and arbiters are no more than data sources.

In the field of international arbitration, the question presented is whether we risk becoming servomechanisms to the AI that one day comes to run the show. Will the role of the practitioner be reduced to no more than one of data entry? Will the future arbitrator become a tech who services the hardware or periodically updates the programming or tweaks the algorithm? Most likely, even McLuhan would find that a bit far-fetched.

If we apply McLuhan's tetrad, it is probably more likely that the practitioner will adapt to the technology. That is to say, that cases and their arguments will be constructed with a view to 'convincing' the AI. Or that panels will come to over-rely on the technology, and perhaps by doing so deprive the parties of their experience and know-how (a risk flagged by the CIArb guideline). Just as one might remove eyeglasses and give them a quick cleaning in order to see something more clearly, arbitrators will need to turn off the AI at times in order to take a closer look at the cases before them.

It is doubtful that the role of the panel is ever likely to be rendered obsolete, because so often disputes involve differences on how issues are framed by the parties. To one party the issue can be framed as a very straightforward question of substantial performance or materiality of a breach, while to the other it is a case of duress and coercion. To one party the issue before the panel is whether goods were conforming, while to the other it is whether risk of loss passed due to the stipulated incoterm. It is not clear how AI would deal with this. Decision-making entails much more than simply plugging data into the variables of a predetermined mathematical function. Nor is it clear how the biases of those developing the AI application would be adequately controlled. Perhaps the arbitrator's role will evolve to become the ultimate guardian of equity and fair play in the proceedings, positioned to overrule the suggested resolution of a dispute rendered by the AI, where the panel's deeper understanding of the law and sense of justice demands such. Perhaps the panel would evolve to become a sort of second instance whose real role is to assure that the AI really does render the right decision.

Closer to today's reality is the risk that the more tech savvy of the parties will gain the upper hand in disputes. This already occurs in high-stakes company litigation where parties are out-resourced by powerful adversaries. When reflecting on this, the issue isn't really technology but rather the trend in international commercial arbitration driving it to look more and more like conventional commercial litigation. The risk that this may skew the outcome of complex cases is quite real. And this will clearly drive new grounds for overturning awards. This concern is directly addressed by the ICC task force and CI Arb guideline discussed previously. Clearly, arbitrators must not only be tech savvy but also be able to address the disparity between parties to ensure the fairness of the proceedings. This role of the arbitrator is likely to grow in prominence at the same rate as tech enters international arbitration.

One possible positive outcome is the disruption of the informational asymmetries inherent in international arbitration practice. Some might say this is the elephant in the room. Confidentiality is one of the great advantages of arbitration. Awards in most commercial cases are available only to those involved in the proceedings. Until recently, tribunals have not been especially transparent about arbitral appointments either. The result is that a select group of practitioners have extraordinarily greater access to information on unpublished awards, decisional trends of tribunals, and the specifics of arbitrators. It's only logical that certain arbitrators and specialist firms are so often selected by clients. It is a natural outcome of informational asymmetry.

The case of arbitrator selection is particularly illustrative. Information on specific arbitrators has long been a 'word of mouth' affair. Selection often comes down to asking around. In some markets a select few seem to corner the market. This may be due to greater experience but also in part to greater access to information. Some tribunals have come under fire for their penchant for selecting the same old crew. Tribunals have responded with important work designed to provide greater transparency and efforts to limit repeat appointments.

The ICC has started putting edited redacted awards online. Other service providers have designed commercial products providing information on awards as well. Some have gone about creating databases on arbitrators to assess their track records, so to speak. But as of today, like any database these can only be as good as the information they are fed. Faced with today's reality, legal tech may very well be a welcome promise to disrupt this informational asymmetry with real transparency and level the playing field.

8 CONCLUSION

One cannot resist a fondness for legal tech insofar as it facilitates the resolution of ever more complicated international disputes. Technological advances have already delivered indisputable benefits, empowering panels and counsel to more quickly and efficiently manage ever more complex disputes.

The guidelines developed by organizations such as the ICC and CI Arb provide invaluable assistance to arbitrators and parties. Not only do they draw attention to the potential risks such as those pertaining to procedural fairness and due process; they also provide practical tools to help navigate these very risks. The underlying theme of this guidance is to not let the technology get in the way of the underlying purpose of arbitration by reminding us to temper our enthusiasm for the new, with the primary focus of rendering fair and measured decisions.

The future promises further technological advance, and practitioners are advised to remain conscious as to how they may unwittingly adapt their thinking and behaviour to such advances. Technological development in arbitration practice will no doubt force practitioners to adapt and innovate. Roles may eventually evolve as counsel and arbitrators adapt to the technology. Indeed, some may come to enjoy the promise of disruption of the informational hegemony that has long stood as a barrier to entry into this field.

While one might be wary of anything that promises to transform everything they know, the idea is admittedly intriguing. This is not a moment to think outside the box but rather to be wary of all boxes or anything that constrains and pre-thinks for us. It is only logical that the international arbitration community should take the lead on the development and deployment of legal tech in their field. If it's done with eyes wide open, it's probably the right way forward.