CPLJ
Comparative
Procedural Law and Justice

PART IX

DIGITAL REVOLUTION AND PROCEDURAL LAW

CHAPTER 1

DIGITAL REVOLUTION AND ITS IMPACT ON THE JUSTICE SYSTEMS (A GENERAL APPROACH)

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https://www.cplj.org/publications/9-1-digital-revolution-and-its-impact-on-the-justice-system-(a-general-approach)

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1 INTRODUCTION

1 As digital life comes about from fiction to reality, the overflowing of this cyber-driven augmented reality into our justice systems is only a matter of time. From a sociological perspective, revolution signals the occurrence of a series of transformative interrelated events with a long-lasting impact on societies.[1] Their disruptive and lasting character sets them apart from other passing social movements or historical events like revolts or rebellions. A revolution can either originate at the grassroots level or be orchestrated from above. In either case, mass mobilization follows, expands and cements the initial thrust.

2 Unlike social or political revolutions which typically occur at a point in time up to a (relatively) brief period of years to the utmost, the digital revolution as we know it has spanned three decades and is still ongoing. With the advent of e-commerce, online social interaction, customized ads and products, massively multiplayer online games (MMOG), teleworking, the always-on as 'the new normal'[2], and the metaverse, technologies are driving radical changes to our ways of life. 'What is disrupted, here, are not merely products or services, but daily human routines and basic social and political practices'.[3]

3 Our justice system is no exception. Many benefits are indeed expected from a digital revolution in this field, namely:

- streamlining access to justice and to judicial data (eg, broadcasting of hearings, court transcript);
- providing 24/7 (remote) access to court information and services;
- reducing case backlog and the average processing/case management time;
- increasing court-to-court data sharing and exchanges with justice partners.

4 These benefits match well the goals of procedural law, which complement substantive law by governing the process by which members of society can settle their disputes in or out of court, as well as by prescribing the means by which they can seek enforcement of their rights and obligations before a court of law. It guides the when, the where, the how, to and from

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[1] J P Reed, *Oxford Bibliographies*, *sub verbo* 'Revolution' www.doi.org/10.1093/OBO/9780199756384-0115.
[2] M Evans, 'Five Key Traits Defining Connected Consumers In 2019' *Forbes* (23 September 2019) www.forbes.com/sites/michelleevans1/2019/09/23/five-key-traits-defining-connected-consumers-in-2019/?sh=6ae793ed22df accessed 11 July 2024.
[3] J Hopster, 'What are socially disruptive technologies?' (2021) 67 Technology in Society www.doi.org/10.1016/j.techsoc.2021.101750 accessed 11 July 2024.

whom a dispute would be settled or adjudicated. Procedural law paves the way to procedural justice, which 'speaks to the idea of fair processes, and how people's perception of fairness is strongly impacted by the quality of their experiences and not only the end result of these experiences'.[4] It is indeed a 'people-centered' process, or 'people-focus trend'[5], powered by the litigants' daily justice experience and their subjective expectations thereof.

5 From a broad comparative perspective, this chapter will survey the driving forces (B) and challenges (D) that have carved out the odyssey of (procedural) cyberjustice in an evolving background of regulatory changes and social transformation (C). As a new modernity and governance framework, the advent of cyberjustice disrupted our accustomed, that is, prejudiced, way of delivering justice while lighting up the path towards a revamped procedural fairness coming up to the expectations of the twenty-first century citizen. Before addressing the main topic though, it would be necessary to clarify key notions and terminology in the field of cyberjustice (A).

1.1 Key Notions and Terminology: Trudging up the Field of Cyberjustice

6 Coined at the turn of this century, '*cyberjustice'* brings out a mixed sense of familiarity and otherworldliness.[6] On the one hand, we all share an innate idea of justice, which scholars and theorists have evolved out of human nature into no less than an impartial and perceptively satisfactory process of adjudicating conflicting claims and of reaching specific decisions.[7] On the other hand, the prefix 'cyber' is most evocative of a science-fictional world of cyberpunk, cyborgs, cybernetics, as well as soon-to-be futuristic designs presumptively foreign to - and freestanding from - humanity.

7 The dichotomy is more apparent than real. There may be as many alliances forged between 'cyber' and 'justice' as between humans and technology. Indeed,

> […] there are three features characteristic of cyberjustice: first, a software application that automates certain functions, models the relevant procedural framework (rules concerning domain names, for example) and offers an interface from which all the steps

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[4] Yale Law School 'Procedural Justice' (*The Justice Collaboratory of Yale Law School*) https://law.yale.edu/justice-collaboratory/procedural-justice accessed 11 July 2024.

[5] J-F Roberge, '*Le sentiment de justice. Un concept pertinent pour évaluer la qualité du règlement des différends en ligne?*' ('The feeling of justice. A relevant concept for assessing the quality of online dispute resolution?') (2020) Sorbonne Law Review 5, 5.

[6] Cyberjustice Laboratory, *A Tale of Cyberjustice. A modern Approach to Technology in the Canadian Justice System 2011-2018*, 13 www.cyberjustice.ca/files/sites/102/CJ-LAB-A-Tale-of-Cyberjustice-Final.pdf accessed 11 July 2024.

[7] S Bennett, L Hine and L Mazerolle, *Oxford Bibliographies*, *sub verbo* 'Procedural Justice' www.doi.org/10.1093/OBO/9780195396607-0241 accessed 11 July 2024.

of a procedure can be performed and all evidence stored, transmitted and managed; second, permanent online technical support; and third, a network of neutral third parties recognized for their expertise in the relevant area.[8]

8 As regards *procedural justice,* technology holds great promises in streamlining our justice system and expediting in-/out-of-court dispute resolution processes. Recent empirical evidence across 175 countries backs the old maxim *justice delayed is justice denied*, by finding courts' delays to be negatively correlated with countries' quality-of-justice metrics in a statistically significant way.[9] To be sure, one should be cautious not to confound correlation and causality, nor to oversimplify quality-of-justice challenges to a matter of time efficiency alone. That being said, the advent of information and communication technology (ICT) tools does proffer alternatives to our traditional way of meting out justice. The following core principles are of particular significance in the digital age: technology neutrality, functional equivalence, integrity and authenticity.

9 In a general sense, *technology neutrality* can be defined as 'the freedom of individuals to choose the most appropriate technology adequate to their needs and requirements for development, acquisition, use or commercialization, without knowledge dependencies involved as information or data'.[10] Transposed into the legal setting, this principle refers to the interchangeability of paper and electronic mediums in the delivery of legal work and the adjudication process. It is first expressly recognized as a regulatory principle in a 1999 European Commission (EC) communication purporting to outline a new framework for electronic communications infrastructure and associated services.[11] In the EC's wordings, '[t]echnological neutrality means that legislation should define the objectives to be achieved, and should neither impose, nor discriminate in favor of, the use of a particular type of technology to achieve those objectives'. [12]

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[8] K Benyekhlef and F Gélinas, 'Online Dispute Resolution' (2005) 10(2) Lex Electronica, 5 www.lex-electronica.org/files/sites/103/10-2_benyekhlef-gelinas.pdf accessed 11 July 2024.

[9] A Melcarne, G B Ramello and R Spruk, 'Is justice delayed justice denied? An empirical approach' (2021) 65 International Review Law and Economics 105953 www.doi.org/10.1016/j.irle.2020.105953 accessed 11 July 2024.

[10] Viafirma, 'What is technological neutrality?' (*Viafirma*, 15 February 2018) <www.viafirma.com/blog-xnoccio/en/what-is-technological-neutrality/> accessed 11 July 2024.

[11] European Commission, 'Towards a new framework for Electronic Communications infrastructure and associated services. The 1999 Communications Review' (Communication) COM (1999) 539 final https://aei.pitt.edu/5978/1/003190_1.pdf accessed 11 July 2024. Art 5 of the Model Law on Electronic Commerce 1996 (UNCITRAL) prohibits discrimination of information 'solely on the grounds that it is in the form of a data message'. The *Guide to Enactment of the UNICTRAL Model Law on Electronic Commerce (1996)* stresses on the need to create a 'media-neutral environment' by 'providing equal treatment to users of paper-based documentation and to users of computer-based information' (para 6). The phrase 'technology neutrality' is not expressly stated though in these UNCITRAL instruments.

[12] Ibid 14.

10 It should be noted that the principle of technology neutrality need not be expressly stated in applicable legislations. It is implicit in every regulation that does not expressly create distinctions between technologies or between technology- and paper-based information. Yet to have the principle explicitly acknowledged averts legislators from making further unnecessary distinctions and induces courts and tribunals to think twice before adjudicating otherwise.

11 Indeed, scholars have criticized the indiscriminate application of the technology-neutral principle in specific contexts and circumstances where intrinsic differences in the mediums used would warrant a reasonably different treatment.[13] That being said, to require regulations to be technologically neutral does not preclude the making of apposite distinctions nor the imposition of new requirements where necessary to achieve the neutrality objective, such as the twin concepts of integrity and authenticity peculiar to digital media, as discussed below.

12 *Functional equivalence* derives directly from the technology-neutral principle to give the same legal effect to electronic and paper communications. In its Model Law on Electronic Commerce (1996), the United Nations Commission on International Trade Law (UNCITRAL) pioneered the functionally equivalent approach to facilitate electronic commerce, so that the legal requirements relating to the use of paper-based documentation would not impede the development of modern means of communication. As the expression suggests, a functionally equivalent approach dwells on the many functions achieved by, or expected from, paper originals, 'with a view to determining how those purposes or functions could be fulfilled through electronic-commerce techniques'.[14] UNCITRAL goes further as to pinpoint the following functions as yet served by paper documents, namely,

> to provide that a document would be legible by all; to provide that a document would remain unaltered over time; to allow for the reproduction of a document so that each party would hold a copy of the same data; to allow for the authentication of data by means of a signature; and to provide that a document would be in a form acceptable to public authorities and courts.[15]

13 In the procedural law context, a functionally equivalent approach is most concerned with acknowledging the probative value of digital or electronic evidence. The expression means:

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[13] B A Greenberg, 'Rethinking Technology Neutrality' (2016) 100 Minnesota Law Review 1495.

[14] Model Law on Electronic Commerce with Guide to Enactment 1996 with additional article 5 *bis* as adopted in 1998 (UNCITRAL) para 16 https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/19-04970_ebook.pdf accessed 11 July 2024.

[15] Ibid para 16.

> […] any probative material stored or transmitted in digital form, i.e as a series of the digits 0 and 1, which can be used in legal proceedings before a court in order to prove a fact according to the required standard of proof. It can be obtained from different sources, including fixed computer hard drives, removable USB flash drives, mobile phones, satellites and the Internet, and can have different forms, such as text documents (eg Word or Excel files, emails, instant messages and spreadsheets), maps, databases, digital images, video and audio files, GPS data, Internet browser histories and metadata. Digital evidence can be open access, i.e accessible by everyone without passwords or encryption, or available only to authorized users.[16]

14 Irrespective of its format, digital evidence should not be downgraded or discriminated against paper-based documents, including paper originals, provided that the main functions of paper-based documentation be fulfilled in electronic communications. Many national instruments have taken up a functionally equivalent approach towards e-evidence, so not to impose on their validity unjustifiably different standards than paper-based documentation. The 2019 Guidelines of the Council of Europe on electronic evidence also remind the member States that '[c]ourts should not refuse electronic evidence and should not deny its legal effect only because it is collected and/or submitted in an electronic form'.[17]

15 Indeed, some intrinsic features of electronic evidence may warrant particular attention. We are referring to the twin concepts of *integrity and authenticity*. They serve as functionally equivalent substitutes to the requirement to produce paper-based originals as the best – namely the most reliable and trustworthy – piece of evidence. At first glance, these are at some level 'mechanical characteristics of digital objects'.[18] In the archival context, the *integrity* of digital objects – whether they be textual, numeric, image, video, sound, or multimedia – can be broken down into five components: content, fixity, reference, provenance, and context.[19] Content embraces both the tracking of the digital objects' configuration on the bit-level, and the preserving of their substantial information as well as a functionally equivalent content layout and structure across standards and hardware technologies. Fixity refers to digital records' being preserved through time and not being

[16] M Roscini, 'Digital Evidence as a Means of Proof before he International Court of Justice' (2016) 21(3) Journal of Conflict and Security Law 541.

[17] Council of Europe, 'Electronic Evidence in Civil and Administrative Proceedings' (Guidelines and explanatory memorandum, 30 January 2019) para 6 https://rm.coe.int/guidelines-on-electronic-evidence-and-explanatory-memorandum/1680968ab5 accessed 11 July 2024.

[18] C Lynch, *Authenticity and Integrity in the Digital Environment: An Exploratory Analysis of the Central Role of Trust* (CLIR Report) www.clir.org/pubs/reports/pub92/lynch/ accessed 11 July 2024.

[19] Task Force on Archiving of Digital Information, *Preserving Digital Information* (Report, 1 May 1996) 12 ff www.clir.org/wp-content/uploads/sites/6/pub63watersgarrett.pdf accessed 11 July 2024.

'subject to change or withdrawal without notice'.[20] This latter condition may require the building and tracking of complete records of changes, including any alterations thereof, which can turn out to a cumbersome and challenging process. Consistent reference is concerned with the interrelation of different digital objects and works across editions, versions and cross-citations. It is closely linked to the concept of tracing provenance of digital objects, from the original creator up to the point of release, as '[t]o preserve the integrity of an information object, digital archives must preserve a record of its origin and chain of custody'.[21] The most distinctive attribute of digital objects – as compared with their paper equivalent – would be their contextual dimension comprising the hardware and software dependencies, the mode of distribution, and the network of linkages in and between digital objects themselves.

16 *Authenticity*, on the other hand, can be viewed as proof of an object's integrity. The issue of authentication arises regardless of the object's format, but 'because digital objects bear less evidence of authorship, provenance, originality, and other commonly accepted attributes than do analog objects, the former are subject to additional suspicion'.[22]

17 In legal parlance, authentication and identification refers to the preliminary step by which any evidentiary offering should be tested as to their genuineness before being admitted as evidence at trial. According to the US Federal Rules of Evidence, '[t]o satisfy the requirement of authenticating or identifying an item of evidence, the proponent must produce evidence sufficient to support a finding that the item is what the proponent claims it is'.[23] It is intrinsically linked – but not reducible to – the best evidence rule as recognized by the common law courts throughout the eighteenth century. In the case of a witness testimony, authentication requires the proponent to establish the competency of the witness, while a document's authenticity can be proven by demonstrating its authorship, chain of custody and alterations.

18 Unless the opposing party admit to the authenticity of the e-evidence tendered, the proof of authenticity is a time-consuming and costly process. Considering the increased frequency and volume of electronic evidence tendered before courts and tribunals, should expert testimonies and forensic order appraisal be required in every instance, there would be no end to pre-litigation. At least in civil matters, the Uniform Evidence Act[24] provides for an

[20] Ibid 14.
[21] Ibid 16.
[22] C T Cullen, *Authentication of Digital Objects: Lessons from a Historian's Research* (CLIR Report) www.clir.org/pubs/reports/pub92/cullen/ accessed 11 July 2024.
[23] Federal Rules of Evidence (USFRCP), Rule 901.
[24] Uniform Electronic Evidence Act (ULCC), https://ulcc-chlc.ca/Civil-Section/Uniform-Acts/Uniform-Electronic-Evidence-Act accessed 11 July 2024.

evidentiary presumption as to the integrity of electronic records system, under conditions that evidence be tendered to support

> a finding that at all material times the computer system or other similar device was operating properly or, if it was not, the fact of its not operating properly did not affect the integrity of the electronic record, and there are no other reasonable grounds to doubt the integrity of the electronic records system.[25]

19 In other countries (eg, China), the authenticity of e-evidence can be preserved and fixed pre-emptively by notary institutes at the request of a litigant, but this procedure is 'often inaccessible to ordinary […] civil litigants'.[26] More recently, the possibility of harnessing blockchain technologies to preserve digital files for potential civil litigations is gaining recognition in China. Blockchain is a digital distributed ledger that allows its information to be replicated, shared and synchronized throughout a decentralized, peer-to-peer network which is both tamper-resistant and traceable:

> In essence, after an e-file is submitted to the end of the blockchain for record keeping (or encoding a "block" of data), it is hashed (given an algorithmically generated, unique code called "has value" that is used to "fingerprint" the input data), digitally signed, and embedded a cryptographic hash of the previous block on the chain, which makes the blocks link together in a chain-like structure. Then the new block is distributed to the network, all nodes reflect the updated data as it occurs, and each node houses a full copy of the blockchain. Importantly, the e-file itself is not on the blockchain; only its hash is part of this chain. Even a minuscule change to an archived block in the chain breaks the chain by changing the hash code and causing the distributed copies to mismatch. If the chain is not broken, then the blocks are known to be in their proper state. This resistance to tampering makes blockchain an attractive solution to the demand for authentication of e-evidence. It provides a verifiable record that a given e-file (eg, a video clip) was uploaded from a particular device at a particular time. If that video clip is later presented as evidence in a trial, the court can verify that the video clip seen in court has not been altered or processed in any way during the period between its being written onto the blockchain and its being presented in court as evidence.[27]

20 Together these fundamental principles – of technology neutrality, functional equivalence, and integrity and authenticity – lay the groundwork for a full integration of technologies into our procedural systems.

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[25] Ibid, Art 5(a).
[26] Z Wang, 'China's E-Justice Revolution' (2021) 105 Judicature 36.
[27] Ibid.

21 In the matter of *substantive justice* and *procedural fairness*, the use of artificial intelligence *(AI)* raises expectations strengthened by the quickening pace of technological evolution and also, the enduring aura of science-fiction. Appearances can be deceiving: procedural fairness has as much to do with securing substantially fair outcomes of decisions as the substantive law itself. Should one party not be given a fair opportunity to respond to allegations made against them, the tribunal will only hear one side of the story and make a decision disconnected to the true fact situation. Should pieces of evidence introduced at trial not be subject to an authenticating process, tribunals will likely make an unfair decision grounded on unreliable or misleading information. What if all-powerful (and empowering) algorithms should sift our applicable law through judicial precedents so as to propose a purportedly rightful interpretation of conflicting authorities? What would be the appropriate procedural safeguards in an era of automated justice?

22 In the current state of technology, the application of data analysis methods and AI technologies within the field of law takes the name of *legal analytics*. Legal analytics has the potential to either support or replace the activity of lawyers and the judiciary. These are mainly advanced data analytics tools aimed to:

- streamline court/legal document management and discovery;
- facilitate/speed up case law research and analysis;
- help gain insight into settlement rates and likelihood of success of a particular case at trial.

23 Natural language processing (NLP) and machine learning (ML) are two of the most used AI techniques for legal analytics purposes. NLP enables machines to understand, translate, and analyse human languages. Involving both semantic (meaning) and syntactic (sentence structures) analyses, it applies to multiple tasks from topic classification to keyword extraction. As to ML, it is a subfield of AI and consists of a set of optimization algorithms trained to improve and automate task performance and outcome prediction without the need of explicit rule-based instructions or programming. ML techniques analyse vast amounts of data – often unstructured – by leveraging connections between data and differential weights to be granted to input parameters in order to produce accurate predictions/outcomes. The use of chatbots can enhance user experience by interacting in real-time with human inquirers so as to be better acquainted with their needs and be able to provide tailored answers to customized queries.

24 For the foregoing reasons, AI should more aptly stand for 'augmented' rather than 'artificial' intelligence, at least in the judicial context. The expression *'Augmented Intelligence'* underscores the idea of partnership between humans and machines so to enhance our

judicial performance, rather than downright substituting machine decisions to human judgment. Back in 1957, W Ross Ashby, a pioneer in the field of cybernetics, had suggested the idea of 'amplifying intelligence' specifically applied to our power of appropriate selection.[28] The partnership model is key as human oversight and judgment remains paramount if only to define and review the appropriate boundaries between acceptable/recommended use of advanced analytics tools and 'unlawful' automated interference.

25 There are roughly two different stages where one can make use of augmented intelligence for dispute resolution purposes. We can do so either before or after the institution of proceedings. Before the commencement of proceedings or even before a dispute arises, AI can help clarify the rights and obligations of either party, as detailed in Chapter 6. During the proceedings and, even, in the course of the judicial decision-making process, AI can be used to streamline case management processes and to enhance the quality of judgments.

26 Last but not least, fully integrating technologies into our legal routine should take into account the need to reframe and adapt well-known principles to the renewed realities of the digital age, including the protection of individuals' confidential data across multiple communication channels and devices, the application of open court proceedings in the era of the world wide web, and the importance of preserving judicial independence and the duty of judicial reserve under the pervasive influence of – and interactions with – social media. After all, cyberjustice is less about a mechanistic mimicry of traditional justice into the cyber-context than a thorough remodelling of our justice system and judgment delivery into something new.

1.2 Driving Forces and Challenges Leading Up the Way to Cyberjustice

27 The implementation and evolution of cyberjustice (in a broad sense) has followed different paths around the world. There is a comparatively early and very broad acceptance in South Korea, Canada and Spain. Other jurisdictions, however, have been more reluctant (Norway, Germany), while the Italian way to cyberjustice seems to be limited to paperless procedures. This part will explore, from a comparative perspective, which may be the factors explaining an easier/earlier acceptance of cyberjustice, as well as those on which reluctance may still rest.

[28] W R Ashby, *An Introduction to Cybernetics* (Chapman & Hall 1957) 271–272.

28 Scholars have been reflecting over three decades on the most adequate models for justifying technology acceptance/rejection.[29] People's (un)willingness to make use of and adopt new technologies are governed by subjective as well as contextual factors. Subjective factors relate to individuals' perception as to the ease of use (effort expectancy) and usefulness (performance expectancy) of the proposed technologies, along with the myriad variables mediating or moderating those perceptions. Among the main contextual factors are system characteristics, ease of access, computer literacy, training availability, motivation, relative advantage, and risk of harm.

29 Up until the COVID-19 pandemic, members of the legal profession and of the judiciary in general were reluctant to embrace new technologies. The result was that only a few attempts have been made 'to fit new technologies into outdated regimes and practices'.[30] It is as though the rule of law and the scale of justice could not be rightfully enforced outside the sanctity of the physical courtroom.

30 To start with, the introduction of digital evidence has been met with a 'severe lack of judicial confidence'.[31] Unlike paper documentation, electronic printouts do not *per se* warrant their integrity, since alterations thereof may not be noticeable to the naked eye:

> The special characteristics of electronic evidence also raise concerns about the accuracy and authenticity of the evidence. This is primarily due to the intangible and transient nature of data, especially in a networked environment where such evidence can be created, stored, copied and transmitted with relative ease. It can also be modified or tampered without signs of obvious distortions, thereby rendering the process of

[29] F D Davis, 'Perceived usefulness, perceived ease of use, and user acceptance of information technology' (1989) 13(3) Management Information Systems Quarterly 319; V Venkatesh and others, 'User acceptance of information technology: Toward a unified view' (2003) 27(3) Management Information systems Quarterly 425; N Charness, 'Access, motivation, ability, design, and training: Necessary conditions for older adult success with technology' in M Charness and KW Schaie (ed), *Impact of technology on successful aging* (Springer 2003) 15; K E Caine and others, 'Understanding acceptance of high technology products: 50 years of research' in *Proceedings of the Human Factors and Ergonomics Society 50th Annual Meeting* (Human Factors and Ergonomics Society 2006); MT Braun, 'Obstacles to social networking website use among older adults' (2013) 29(3) Computers in Human Behavior 673; Y Barnard and others, 'Learning to use new technologies by older adults: Perceived difficulties, experimentation behavior and usability' (2013) 29(4) Computers in Human Behavior 1715; N Charness and WR Boot, 'Technology, Gaming, and Social Networking' in KW Schaie and SL Willis (ed), *Handbook of the Psychology of Aging* (8 edn, Academic Press 2016) 389; H Taherdoost, 'A review of technology acceptance and adoption models and theories' (2018) 22 Procedia Manufacturing 960.

[30] K Eltis, 'The Judicial System in the Digital Age: Revisiting the Relationship between Privacy and Accessibility in the Cyber Context' (2011) 56(2) McGill Law Review 289.

[31] Z Wang (n 26).

> investigation and recording of evidence extremely vulnerable to claims of errors, accidental alternation, prejudicial interference or fabrication.[32]

31 Some judges are reluctant to ground findings of fact on digital evidence alone. The general sentiment is that of scepticism as to the integrity of digital evidence, since '[e]lectronic data is easier to manipulate than other forms of evidence, and any such manipulation can be harder (or impossible) to identify'.[33]

32 There is also the difficulty of tendering digital evidence at trial in paper format. The tendering process itself may omit or alter important data (eg, cached files, identification details, tracing data) that are only visible in (determined) electronic formats. Accordingly, the 2019 Guidelines of the Council of Europe to member States on *Electronic Evidence in Civil and Administrative Proceedings* explicitly allow parties to 'submit electronic evidence in its original electronic format, without the need to supply printouts'.[34] Likewise, '[t]ransmission of electronic evidence by electronic means should be encouraged and facilitated in order to improve efficiency in court proceedings'.[35] The growing volume of electronically-generated data in recent years should have prompted courts to modernize their equipment so to receive, analyse and support digital evidence tendered at least in the most common digital formats.

33 Indeed, the use of information technologies defies traditional evidentiary categorization (eg, documentary vs real vs testimonial).[36] Data stored on word processors can serve as documentary evidence. While tape recordings are real evidence left for the trier of fact's own observations, a digital interview recording is akin to a testimonial, albeit subject to hearsay restrictions. Besides, even paper-based documentary or photographic evidence can benefit from a more organized, lively and effective presentation with easy-to-use software programs (eg, PowerPoint) or evidence cameras, supported by easy-to-access digital input locations (eg, laptop connections) and display monitors. According to Judge H B Dixon Jr.:

> Technology-based evidence presentation, once learned, is substantially faster than moving a physical exhibit around the courtroom. Many technology enthusiasts claim that a party using technology to present argument and evidence may have the upper hand when compared with those who use no technology to aid their presentation. Other enthusiasts say the use of courtroom technology merely facilitates the storytelling but

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[32] Jamshed, 'Reliability of Electronic Evidence' (2016) 3(1) International Journal of Recent Research Aspects 148, 149.
[33] Z Wang (n 26).
[34] Council of Europe (n 17) para 9.
[35] Ibid para 15.
[36] L A Silver, 'The Unclear Picture of Social Media Evidence' (2020) 43(3) Manitoba Law Journal 111.

> does not make a case where there is none. Judges who preside in technology-enhanced courtrooms will likely encourage the litigants to use the basic technology setup.[37]

34 That being said, the overall mindset tends to view the input of technologies as means of devising substitutes to the existing judicial process, rather than initiating radical changes to our practices of law and administration of justice in ways that were not previously possible or even conceivable.[38] The general conception of justice remains that of a sacrosanct place rather than that of a public service:

> Do we really need on all occasions to congregate physically to settle our legal differences? In a digital society, in which it is commonplace to receive and provide all manner of services online, is it such a leap to imagine the delivery of online court services?[39]

35 The result is a process- rather than outcome-oriented thinking in justice delivering. Aside from the need to receive and analyse digital evidence, there was no compelling incentive to modernize our justice systems or to test alternative ways of receiving testimonials or of holding hearings absent exceptional circumstances. According to a 2013 cross-country study by the Organisation for Economic Cooperation and Development (OECD),[40] the majority of the OECD courts make use of electronic filing forms and registers as well as maintain their own websites. However, more interactive online facilities have not yet been implemented in many countries, including the possibility for litigants to follow up their cases online. Yet the allocation of justice budget to computerization is found to be related with shorter trial length and greater productivity of judges. The effect is more significant within countries where the degree of computer literacy is higher. The predictability of judicial decisions has also been found to be associated with lower appeal rates, which leaves room for greater involvement of AI-driven judicial data analytics.[41]

36 In general, prior to the pandemic, efforts toward computerization only made up for a small budgetary part (rarely exceeding 5-10%) in the overall budget allocated to European

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[37] Judge H B Dixon Jr, 'The Basics of a Technology-Enhanced Courtroom' (2017) The Judges' Journal www.americanbar.org/groups/judicial/publications/judges_journal/2017/fall/basics-technologyenhanced-courtroom/ accessed 11 July 2024.

[38] R Susskind, *Online Courts and the Future of Justice* (Oxford University Press 2019).

[39] R Susskind, 'The Future of Courts' (2020) 6(5) The Practice https://clp.law.harvard.edu/knowledge-hub/magazine/issues/remote-courts/the-future-of-courts/ accessed 11 July 2024.

[40] G Palumbo and others, *Judicial performance and its determinants: a cross-country perspective* (OECD 2013) www.doi.org/10.1787/5k44x00md5g8-en accessed 11 July 2024.

[41] Ibid.

courts.[42] According to the 2018 data, every participating State had established online access to legal information, case-law and practical court-related information to the benefit of litigants and members of the general public:

> In some countries such information is provided by courts (eg, Albania, Malta, Serbia), in others by the Ministry of Justice (eg, Croatia, Iceland, Poland, the Slovak Republic, Turkey, UK - England and Wales). Access to case-law differs considerably from State to State. While most of the States emphasis that there is no obligation to provide information on expected timeframes of proceedings, different approaches to the issue are noticed (eg, instruments for informing parties in the preparatory phase of the proceedings - Albania, Denmark, Finland, Italy, Lithuania, North Macedonia, Romania, Serbia, the Slovak Republic, Slovenia, Sweden, Turkey; online tracking - Latvia). The IT tools enable easy and free access to information on legislation and legal procedures, accelerate the exchange of documents and information, reduce costs, increase environmental responsibility and release judicial staff from unnecessary tasks.[43]

37 Beyond e-access to relevant court and legal information, the general impression is that of the growing reach of digital tools within the European judiciary:

> ICT is no longer a novelty in European judicial systems. Judicial systems whose traditional activities and work organisation were based on paper (legal texts, case files, court registers etc.) are increasingly replacing the old tools with the digital ones. The courts are being transformed to accommodate new options and move on-line. Some hearings are taking place via videoconferencing, electronic evidence is regularly presented, while case files and court decisions are becoming digital objects with their content tagged to ease search, analysis and legal reasoning.[44]

38 Focus had been mostly placed on the development of court and case management tools, follows by decision support tools, while communication between courts, professionals and litigants attracted comparatively less attention.[45]

39 That being said, well before the pandemic, as technology becomes an integral part of our lives, the growing gap between our daily 'tech experience' and paper-based court procedures has been increasingly felt first by the rising generations and then the general public. Accordingly, many areas of reform have been pointed out, even within the legal

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[42] European Commission for the Efficiency of Justice (Council of Europe), *European judicial systems. CEPEJ Evaluation Report* (Part 1 'Tables, graphs and analyses', 2020 Evaluation cycle (2018 data)) 96 https://rm.coe.int/evaluation-report-part-1-english/16809fc058 accessed 11 July 2024.
[43] Ibid 90 (emphasis in original deleted).
[44] Ibid 95.
[45] Ibid 100.

professions themselves. For many law firms, the lack of technological knowledge can put candidates and otherwise experienced lawyers in a competitive disadvantage.[46] Concerns were voiced primarily over the risks of leaking confidential client data through unsecured communication and storage devices. In this respect, the 2012 Amendments to the American Bar Association (ABA) Model Rules of Professional Conduct the standard of lawyer competence to include keeping abreast of 'the benefits and risks associated with relevant technology'.[47] Likewise, the Model Code of Professional Conduct of the Federation of Law Societies of Canada, as amended in October 2019, requires Canadian lawyers to 'develop an understanding of, and ability to use, technology relevant to the nature and area of the lawyer's practice and responsibilities'[48], at least as regards the relevant technology which is 'reasonably available to the lawyer'[49] in light of the law firm's practice areas, geographic locations and clients' requirements. It should be noted that the Federation of Law Societies of Canada is not a pan-Canadian regulatory body, but assumes only a coordinating role among provincial and territorial law societies, so that the Model Code is not legally binding *per se* despite its persuasive influence over the drafting of provincial and territorial codes of ethics. Similar provisions can be found in the *Model Code of Conduct for European Lawyers*, according to which the lawyers' duty to maintain professional skills should take into account 'the continuous rapid change of the law and technological environment in which they operate'.[50] Where the required standard of technological diligence has not been explicitly dealt with in model code provisions, numerous guidelines, ethics opinions and best practices have been issued since 2010 on the use of different technological applications in the course of the law practice, such as cloud computing,[51] e-discovery,[52] electronic client records, and even virtual law office.

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[46] M A Cohen, 'Lawyers and Technology: Frenemies or Collaborators?' *Forbes* (15 January 2018) www.forbes.com/sites/markcohen1/2018/01/15/lawyers-and-technology-frenemies-or-collaborators/?sh=548da4422f17 accessed 11 July 2024.

[47] August 2012 Amendments to ABA Model Rules of Professional Conduct, Rule 1.1, Commentary [8]. As of 2022, over 40 states have adopted the revised Comment 8 to Rule 1.1: A Klevan, '2022 Practice Management TechReport' (*ABA TechReport 2022*, 24 November 2022) https://www.americanbar.org/groups/law_practice/publications/techreport/2022/prac-mgmt/ accessed 11 July 2024.

[48] Model Code of Professional Conduct (Federation of Law Societies of Canada), as amended on 19 October 2019, Rule 3.1-2, Commentary 4A.

[49] Ibid commentary 4B.

[50] Model Code of Conduct for European Lawyers 2021 (Council of Bars and Law Societies of Europe), Model Article on Relations with Clients (as adopted on 27 November 2020), Rule 2 'Requirement for competence and skill'.

[51] See J Lenon, 'A List of All the Ethics Opinions on Cloud Computing for Lawyers' (*Clio*) www.clio.com/blog/cloud-computing-lawyers-ethics-opinions/ accessed 11 July 2024.

[52] *The Sedona Canada Principles Addressing Electronic Discovery* (3rd edn, January 2022).

40 In a 2016 RAND Justice Policy Program report[53] surveying the US criminal and civil justice systems, concerns have been voiced over the capability of computational tools to handle complicated / voluminous cases and unstructured data, '[m]inimal or nonexistent wireless Internet and bandwidth in many court buildings',[54] the little use of interaction tools to effectively communicate with all the participants in the justice system and the general public, the failure of existing infrastructure to meet the technology expectations of the new generations, and '[r]esistance by judges and lawyers to accept new electronic technology'.[55] This resistance is driven by the limited perceived usefulness of technology by those who have studied, worked, practiced, and succeeded in a paper-based world. As long as some technology-mediated communications can be harnessed in exceptional circumstances (eg, taking a deposition abroad, presenting video evidence), there seems to be no compelling need to alter the principle of in-person trials, appearances, and hearings in the eyes of those accustomed thereto. More fundamentally, the justice system in its traditional lens tends not to consider itself as a (public) service like the others where the needs of the users are paramount. Rather it is expected of users – whether they be lawyers, law clerks and registrars, or non-court-savvy litigants – to submit to the authority, and customs, of justice.

41 The result is an accepted dichotomy between the prevalence of technologies in our daily lives and the tech-proof court premises where justice is being delivered. Indeed, access-to justice-issue encompasses many interrelated dimensions and is not a matter of technology access alone. It can be dealt with in different (alternative) ways, namely by providing more lawyers at lower cost, capping legal fees, the use of alternative dispute resolution opportunities, assisted self-representation, and opening more legal information clinics. The idea that our justice should go entirely online, or that cyberjustice may replace our is a quantum leap that only a few would have imagined.

42 This default mode has undergone a radical shift since the COVID-19 pandemic. The number of articles, publications and conferences related to court digitalization has grown exponentially since 2020-2021. Wide-ranging public health measures like plexiglass barriers and social distancing, as well as worldwide quarantine requirements, have instilled a sense of urgency into the mindset of the stakeholders and ushered our antiquated courthouses into the rush and race of the digital age. This contextual factor played a decisive role in shifting the general attitude towards cyberjustice and our justice systems in general, where there is evident necessity to replace in-person hearings with workable alternatives while

[53] B A Jackson, *Fostering Innovation in the U.S. Court System. Identifying High-Priority Technology and Other Needs for Improving Court Operations and Outcomes* (RAND Corporation, 2016) www.rand.org/content /dam/rand/pubs/research_reports/RR1200/RR1255/RAND_RR1255.pdf accessed 11 July 2024.
[54] Ibid 113.
[55] Ibid 107.

addressing court backlog and reducing the number of outstanding cases. As the author Richard Susskind pointed out:

> The uptake of various technologies, especially video, was accelerated in the justice systems of numerous countries. There remain some skeptics and critics, but in light of the experience during the crisis, there is certainly greater acceptance now than in February 2020 - amongst lawyers, judges, officials, and court users - that judicial and court work might be undertaken very differently in years to come. Minds have been opened and changed over the past few months. Many assumptions have been swept aside.[56]

43 In the wake of the COVID-19 pandemic crisis, the lawyers' duty of 'technological competence' has been further detailed in the Quebec *Code of Professional Conduct of Lawyers.* It is now specified therein that 'the knowledge and skills related to information technologies used within the scope of the lawyer's professional activities are part of the knowledge and skills that a lawyer [must] develo[p] and kee[p] up to date'.[57] The 2021 version of the Ethical Principes for Judges published by the Canadian Judicial Council (CJC) provides the same for Canadian judges, who 'should develop and maintain proficiency with technology relevant to the nature and performance of their judicial duties'.[58] Contrary to similar provisions found in model codes, obligations listed in codes of ethics are legally binding so that non-compliant lawyers can face disciplinary sanctions.

44 The American Bar Association (ABA) 2021 Technological Survey found that, '[f]or the first time, the majority of attorney respondents [53%] are reporting using a laptop computer as their primary device to conduct work'[59] whereas in 2020, the use of laptop as primary device was only 47% and that of a desktop computer, just under half (49%). While an overwhelming percentage of respondents have access to PDF creation software (94%), spreadsheet software (90%), remote access software (84%) and contact software (84%), a smaller percentage of respondents have respective access to conflict checking (67%) and accounting (78%) software.[60] At least 60% of respondents used cloud computing for work-related purposes, while around a third of respondents reported having access to specialized practice software (33%) and project management software (31%). In 2022, smartphones (81%), laptops (68%) and tablets (34%) are reported to be used in the courtroom. Laptops and

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[56] Susskind (n 39).

[57] Code of Professional Conduct of Lawyers (Quebec, Canada), Art 21.

[58] Ethical Principles for Judges (Canada Judicial Council, 2021), Rule 3.C.5 https://cjc-ccm.ca/en/news/canadian-judicial-council-publishes-new-ethical-principles-judges accessed 11 July 2024.

[59] A Paykin, '2021 Practice Management' (ABA TechReport 2021, 24 November 2021) https://www.americanbar.org/groups/law_practice/resources/tech-report/archive/practice-management/ accessed 11 July 2024.

[60] Ibid.

tablets are generally used for accessing 'key evidence and documents' (44.4% for laptops vs 13.4% for tablets), email (42.9% for laptops vs 23.7% for tablets), conducting legal research (40% for laptops vs 15.5% for tablets), and delivering presentations (38% for laptops vs 12.4% for tablets). The use of smartphones on the other hand appears to be less legal-specific; aside from legal research (26.3%), smartphones cover a large array of everyday tasks, from checking email (72.7%) and calendar (49.8%) to real-time communications (49.3%), idle web browsing (24.9%), reading the news (22.9%), and accessing social media (19%).[61] Over the year 2021, remote practice has drastically increased, as '[r]espondents from firms of 100+ attorneys report working remotely an average of 76% more, followed by 61% more among respondents from firms of 10–49, 57% more among solo firms, and 48% more among respondents from firms of 2–9 attorneys'.[62] Overall, the use of new technology has increased 36% across law firm respondents due to the pandemic.[63]

45 From the average litigants' point of view, the 2021 National Justice Survey conducted for the Department of Justice Canada shows that more than half of Canadians aged 18–44 would feel comfortable using technology to access the family justice system, from looking for general information online to completing fillable PDF forms and using video conferencing platforms instead of in-person meetings, mediation or court sessions.[64] Most Canadians aged over 65 reported feeling less comfortable using technology. This relatively high rate of comfort should be contrasted with the low rate of confidence reported by the same Canadian respondents in the family justice system. From pre- to post-pandemic period, the confidence rate of the Canadians has dropped from 24% to 18% as regards the perceived accessibility of the family justice system, while confidence expressed in its being fair to all people has remained stable (from 15% to 14%).[65]

46 Many changes have also been spearheaded on the judicial side. According to the *2020 UK Judicial Attitude Survey*, Wi-Fi access in courtrooms and hearing rooms has drastically increased to 95% by 2020 compared to a 52% reported rate in 2016.[66] The standard of IT equipment used in courts and tribunals (eg, video links, tele-conferencing, payback) has mostly been reported as poor (53%) or non-existent (7%), compared to a roughly 74%

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[61] B Burney, '2022 Litigation & TAR TechReport' (ABA TechReport 2022, 29 November 2022) https://www.americanbar.org/groups/law_practice/publications/techreport/2022/litigation/ accessed 11 July 2024.

[62] A Klevan, '2021 Life & Practice' (ABA TechReport 2021, 29 December 2021) https://www.americanbar.org/groups/law_practice/publications/techreport/2021/lp/ accessed 11 July 2024.

[63] Ibid.

[64] Ekos Research Associates Inc, *National Justice Survey, 2021* (Department of Justice Canada 2021) 28–29 https://publications.gc.ca/collections/collection_2021/jus/J4-93-2021-eng.pdf accessed 11 July 2024.

[65] Ibid 21–22.

[66] Professor C Thomas, *2020 UK Judicial Attitude Survey. Report of findings covering salaried judges in England & Wales Courts and UK Tribunals* (4 February 2021) 24 https://www.judiciary.uk/wp-content/uploads/2022/07/JAS-2020-EW-UK-TRIBS-8-Feb-2021-complete.pdf accessed 11 July 2024.

satisfactory rate on the IT equipment provided to judges personally (eg, laptop) for use when working at court. During the COVID-19 emergency, over half of Court of Appeal Judges (55%) and First Tier Tribunal Judges (54%) were working remotely while a majority (87%) of district judges (magistrates' courts) hearing criminal cases were working in their courts all or most of the time. Overall, a little over half of all employment judges (51%) were working in their tribunals occasionally.[67]

47 To sum up, while legal problems are costly at both the individual and societal levels[68], public funding to promote access to justice and efficient justice delivery via technology has not been a priority for many countries. Although it is recognized that the efficiency of the judicial system can be related 'in a very simple manner to the mere reduction of costs'[69], and that the input of technology 'is seen as a potential facilitator of access to justice'[70], it is not until recently that developing cyberjustice goes beyond piecemeal initiatives, isolated instances, and temporary pilot projects, as we will further detail below.

1.3 Regulating Cyberjustice: Governance Frameworks

48 One can grasp the whole of the cyberjustice landscape only through the lens of the broader picture of regulation and governance. From a comparative historical perspective, transitioning towards cyberjustice has been driven by the concerted effort of both the public and the private sectors. Multidisciplinary efforts are most warranted in such a field requiring technical expertise, in-depth understanding of the justice administration, creative thinking to bridge interdisciplinary gaps and redesign well-established legal traditions against the background of cyber-modernity, as well as an open mind so as not to conflate entrenched habits with unquestionable imperatives.

49 The technology acceptance/rejection models developed so far[71] underscore the ongoing osmosis between public-driven transition and private push to digitization as contextual factors enabling individuals' adoption of new technologies. Grassroots initiatives would remain but curious artefacts in the absence of a state-driven and consistent support of the transition process from traditional to cyber justice. On the other hand, outright public-driven initiatives can be risky and counter-productive without voluntary pilot projects

[67] Ibid 28.
[68] OECD and World Justice Project, *Building a Business Case for Access to Justice* (White Paper) 23 ff.
[69] European Commission for the Efficiency of Justice (Council of Europe), *Measuring the quality of justice* (Document) CEPEJ (2016)12 para 66 https://rm.coe.int/1680747548 accessed 11 July 2024.
[70] G Lupo and J Bailey, 'Designing and Implementing e-Justice Systems: Some Lessons Learned from EU and Canadian Examples' (2014) 3(2) Laws 353, 353.
[71] See above n 29.

having tested firsthand their feasibility, costs of implementation, and users' feedback. The development of online dispute resolution (ODR) is one of many eloquent examples.[72]

1.3.1 Phase / Level 1: The Burgeoning of Cyberjustice

50 The first inroads of cyberjustice into our justice systems were demurely made around the legal limbo of novel evidence and emerging technologies. The use of technologies in the courtrooms dates back to the early 1990s, with the use of technological means to tender evidence in exceptional circumstances (eg, remote attendance of foreign witnesses) and to ensure a wider (more effective) media coverage of court proceedings.[73]

51 Apart from the presentation of evidence through electronic means, a further distinction should be drawn between the use of computer/digital forensics and computer/digital evidence *per se.* The former refers to the use of electronic systems to gather, process, analyse available data which need not be generated electronically in the first place. Digital evidence *per se* is about the tendering before the courts of electronically generated data, either in their original format, or once converted in another electronic/paper-based format for court review.

52 In democratic countries, the first initiatives often come from the private sector, where startups lead the way to innovation. This first phase is characterized by piecemeal proposals to address a particular aspect of litigation considered most amenable to digitalization. In the early 1990s, Internet-related disputes (eg, role-playing games, online commerce and frauds) had first prompted the setting up of online dispute resolution mechanisms.[74] The 1996 conference sponsored by the National Center for Automated Information Research (NCAIR), a non-profit New York corporation, led to three experimental ODR projects:

- The *Virtual Magistrate Project*[75] was a pilot project financed by a USD 75,000 committal from the NCAIR. Three non-profits co-directed the project: the Cyberspace Law Institute (CLI), the American Arbitration Association (AAA), and the Villanova Center for Information Law and Policy. It aimed at providing appropriate neutral

[72] Other examples include the development of the European e-Justice portal, which had been first tested by a pilot project carried out by a group of Member States.
[73] W Freedman, *Press and Media Access to the Criminal Courtroom* (Praeger 1988).
[74] E Katsh, 'Online Dispute Resolution: Some Implications for the Emergence of Law in Cyberspace' (2006) 10(3) Lex Electronica https://www.lex-electronica.org/files/sites/103/10-3_katsh.pdf accessed 11 July 2024; K Benyekhlef and J Zhu, '*À l'intersection de l'ODR et de l'intelligence artificielle: la justice traditionnelle à la croisée des chemins*' ('At the intersection of ODR and artificial intelligence: traditional justice at a crossroads') (2020) 25(3) Lex Electronica 34.
[75] R Gellman, 'A Brief History of the Virtual Magistrate Project: The Early Months' www.umass .edu/dispute/ncair/gellman.htm accessed 11 July 2024; J Osen, 'The virtual magistrate' (1996) 9 Network Security 18.

adjudicatory responses to complaints from subscribers about wrongful online postings (eg, copyright/trademark infringements, defamatory messages). Promptness and accessibility were key to the Virtual Magistrate operation as

> [t]he Net is a real time activity. Messages, files and postings become available worldwide at the touch of a key. Responses to problems must reflect the speed at which the Net operates. Remedies that take months or years to develop will not offer viable solutions.[76]

From complaint filing to final adjudication, the process of the Virtual Magistrate was conducted entirely online. The goal was 'to reach a decision within seventy-two hours (three business days) whenever possible'.[77]

- The *Online Ombuds Office (OOO)* operated by the University of Massachusetts was another pilot project financed by the NCAIR. Unlike the Virtual Magistrate, the OOO did not target Internet-related disputes but rather aimed at facilitating online resolution of conflicts arising out of the Internet:

> The OOO provides users with two types of assistance. Users can help themselves by browsing through the OOO site to retrieve information that is helpful in dealing with their disputes. Users can also ask for the assistance of one of the online ombudspersons. These persons have considerable experience in dispute resolution and will communicate with users about what strategies might be appropriate.[78]

- The third NCAIR-sponsored pilot project was the *Online Mediation Project* of the Center for Law Practice Technology at the University of Maryland School of Law. Likewise, this third project was less interested in Internet-related disputes than in looking at 'the feasibility of resolving family domestic and health care disputes over the Internet or through online systems'.[79]

53 Aside from NCAIR, Université de Montréal, via the *Centre de recherche en droit public* (CRDP) of its law faculty, pioneered the CyberTribunal project in 1996. CyberTribunal stood out as

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[76] Gellman (n 75).
[77] P Ludlow, 'Virtual Magistrate Project Press Release' in P Ludlow (ed), *Crypto Anarchy, Cyberstates, and Pirate Utopias* (MIT Press, 2001) 340.
[78] F A Cona, 'Application of Online Systems in Alternative Dispute Resolution' (1997) 45(3) Buffalo Law Review 975, 988.
[79] Ibid 989.

'a unique *platform* allowing for *both* mediation and arbitration'[80], instead of a mere interface facilitating emails' exchanges (Virtual Magistrate) and while the NCAIR OOO project offered mediation only. It was however in the realm of domain name disputes that the originators of the CyberTribunal project saw an opportunity to expand its expertise by morphing into eResolution, which provided a platform dedicated to resolving Internet-born disputes over domain names. On 1 January 2000, eResolution became one of the three Internet Corporation for Assigned Names and Numbers (ICANN) approved service providers for resolving domain name disputes, alongside the World Intellectual Property Organization (WIPO) and the National Arbitration Forum (NAF). As the *in facto* world manager of domain name registration and IP address allocation, the ICANN requires all domain name holders to submit to mandatory administrative proceedings under its Uniform Dispute Resolution Policy (UDRP). According to the results of an empirical study investigating the outcomes of UDRP proceedings from January to October 2000, eResolution has been found to rule in favour of complainants and respondents (trademark holders) in a relatively equal number of cases, while the other two approved service providers, WIPO or NAF, overwhelmingly ruled in favour of trademark holders.[81] Indeed, many arbitrators working for eResolution were university professors: 'Academics have no clients to whom they have to answer. Thus, the decisions that they render in domain name disputes cannot come into conflict with the real or potential interests of present or future [influential] clients.'[82]

54 Around the same time, a research team led by Professor Yves Poullet – of the *Centre de recherches informatique et droit* (CRID) at the University of Namur –, Karim Benyekhlef – of the CRDP at the Université de Montréal – and Isabelle de Lamberterie - from the *Centre national de la recherche scientifique* (CNRS) in France - obtained a EUR 500,000 grant from the European Commission's Directorate-General for Health and Consumers to start off the ECODIR (Electronic Consumer Dispute Resolution) project. As a three-stage project aimed at assessing the legal implications of an EU-wide online alternative dispute resolution (ADR)

[80] K Benyekhlef, 'Online Consumer Dispute Resolution: a narrative around (and an example of) postmodern law' (2016) 21 Lex Electronica 57, 64 (emphasis added); see also K Benyekhlef, '*Dialogue autour de la régulation des technoproduits. Algorithmes, architecture et règlement en ligne des conflits*' ('Dialogue around the regulation of technoproducts. Algorithms, architecture and online dispute resolution') in E Degrave and others (ed), *Laws, norms and freedoms in cyberspace. Droit, normes et libertés dans le cybermonde* (Larcier 2018).

[81] M Mueller, 'Rough Justice: A Statistical Assessment of ICANN's Uniform Dispute Resolution Policy' (2001) 17(3) The Information Society 151. See also F Candéago, '*Analyse de la politique et des règles de procédure d'I.C.A.N.N. relatives au règlement des conflits entre les titulaires de marques de commerce et les détenteurs de noms de domaine. Conciliation entre les droits et intérêts des détenteurs de marques de commerce et des internaute*' ('Analysis of ICANN policy and procedural rules relating to conflict resolution between trademark and domain name holders. Reconciliation of rights and interests between trademark holders and Internet users') (2004) 9(1) Lex Electronica https://www.lex-electronica.org/files/sites/103/9-1_candeago.pdf accessed 11 July 2024.

[82] K Benyekhlef, 'Online Consumer Dispute Resolution: a narrative around (and an example of) postmodern law' (n 80) 69.

system, ECODIR comprised a feasibility study (stage 1), an assessment of the relevant legal issues (stage 2) and designing a web application for resolving consumer disputes (stage 3). At the implementation phase, the ECODIR application comprised a two-stage process, the first being the negotiation phase between the disputed parties, followed by a third-party mediation using online tools such as secure email/document exchanges and chatrooms. The platform was built by eResolution, a Montreal start-up, based on the work done with the CyberTribunal. Launched in October 2001, ECODIR has been well received:

> It is evident that the *system works*. The parties have navigated through the platform with ease, have had very few problems filing complaints, and a significant number of them have entered the negotiation phase. A number of cases have in fact been settled. One conclusion that can therefore be drawn from these cases is that the system is capable of operating as intended – its potential success as an ODR service is capable of being realised.[83]

55 These first attempts at experimenting with online dispute resolution mechanisms rapidly drew the attention of eBay, then an online auction site. Its initial online mediation pilot project was conducted by the Center for Information Technology and Dispute Resolution at the University of Massachusetts. While not a party to any transaction, eBay was nonetheless interested in mediating disputes that could arise between its millions of online-registered buyers and sellers. The success of the pilot project led to a further partnership between eBay and SquareTrade, then a tech startup acting as the dispute resolution provider. SquareTrade rapidly realized that 'in order to handle large numbers of cases, technology needed not only to allow parties to communicate at a distance but that it needed to assist parties in negotiating effectively and assist them in reaching consensus'.[84]

56 As mentioned above, around the same time the California-based Internet Corporation for Assigned Names and Numbers (ICANN), advocating a 'one world, one Internet' vision, initiated an alternative resolution mechanism over domain name disputes, that is still being used today. Under the 1999 *Uniform Domain Name Dispute Resolution Policy*, registrants are required to submit to a mandatory administrative proceeding in case of allegations involving specifically (i) a domain name that is identical or confusingly similar to another trademark or service mark of the complainant, (ii) in respect of which the applicants or registrants have no rights or legitimate interests, and (iii) which has been registered and is being used in bad faith. Any such complaints will be heard and adjudicated by one of the ICANN-approved dispute resolution service providers. Complaints are to be decided on file, unless the adjudicatory Panel determines that an in-person/tele-hearing, would be necessary due to the exceptional nature of a particular case. Originally eResolution was the

[83] Electronic Consumer Dispute Resolution (ECODIR), *ECODIR Project. Final Report* (30 September 2003) 13.
[84] E Katsh (n 74) 4.

only dispute resolution provider to offer an electronic platform for adjudicating such disputes. It is founded by Professors Karim Benyekhlef (Université de Montréal), Ethan Katsh (University of Massachusetts at Amherst), David Post (Beasley School of Law of Temple University in Philadelphia) and Michael Froomkin (University of Miami Faculty of Law). Its success demonstrated the huge potential of online dispute resolution systems in resolving high-stakes conflicts, as trademarks are valuable intellectual property assets for businesses.

57 While electronic communications go alongside hard-copy materials in administrative proceedings prior to 1 March 2010, proceedings initiated from 1 March 2010 onwards are to be conducted entirely via electronic means, except at the initial stage of written notice of complaints to the respondent, which has to be sent to 'all postal-mail and facsimile addresses' of the registered domain-name holders, as well as to 'the e-mail addresses for those technical, administrative, and billing contacts'.

58 That being said, the operational and infrastructure costs of implementing ODR systems do not make it worthwhile for smaller businesses with fewer users, transactions and complaints.[85]

59 These first attempts toward cyberjustice are *alternative* dispute resolution mechanisms aside from the state court system, and which the parties can opt in to on a voluntary basis. The fact that both parties agree to submit their complaint to one of the alternative options does not preclude their initiating judicial proceedings. In the 1999 ICANN's Uniform Domain Name Dispute Resolution Policy, it was specifically stated that the administrative proceeding does not prevent either party 'from submitting the dispute to a court of competent jurisdiction for independent resolution before such mandatory administrative proceeding is commenced or after such proceeding is concluded'.[86]

60 However, failing an official approval or endorsement from authorities, these private non-profit initiatives are fragile to fluctuating economic conditions while having difficulty gaining public trust and recognition.

1.3.2 Phase / Level 2: State Intervention in Cyberjustice

61 Over time, with the increasing availability of mature technology and successful pilot projects, public authorities ally with startups and big tech companies to give an official push

[85] A J Schmitz and J Martinez, 'ODR and Innovation in the United States' in D Rainey, E Katsh and M S Abdel Wahab (ed), *Online Dispute Resolution: Theory and Practice. A treatise on Technology and Dispute Resolution* (2nd edn, Eleven International 2021).

[86] Uniform Domain Name Dispute Resolution Policy (ICANN, 26 August 1999) https://www.icann.org/resources/pages/policy-2024-02-21-en accessed 11 July 2024.

to innovation. This second phase is most noteworthy for the drafting of multi-annual government strategies and proposals to implement discrete stages of the cyberjustice Projects. To achieve sustainable goals therein, government grants and funding are critical. The most notable regional or national initiatives include:

1.3.2.1 The European e-Justice / Cyberjustice Project

62 The European e-Justice project can be viewed as a subset of e-Government initiatives aimed at expediting and improving the delivery of European public services. It was at the outset a byproduct of the European Single Market enabling the free movement of commodities, services, people, and hence the rise of cross-border litigations. So far, European e-Justice has been driven over a decade by three action plans and two quadrennial strategies, implemented by the Justice and Home Affairs Council (JHA), the European Commission and Member States.

- The 2009–2013 Multi-Annual European e-Justice Action Plan[87] has been developed partially in response to the need of a growing number of European citizens involved in cross-border litigations. The 2009-2013 Action Plan outlines the essential features of a European system of e-Justice, which should provide for access to judicial information – including the interconnection of the Member States' databases of criminal records, the dematerialization of cross-border (extra)judicial proceedings, and streamlining communications (eg, through videoconferencing or secure electronic networks) between judicial authorities and the Member States.

  Notably the European e-Justice portal should consist of a secured and decentralized pan-European platform enabling 'effective and secure exchanges of [legal and judicial] information' [88] among legal practitioners and judicial authorities across Member States, including appropriate authentication mechanisms as well as allowing for electronic signatures and robust data protection. The Portal, hosted by the European Commission, was launched on 16 July 2010.

  In its 2011 Communication on the *Single Market Act*, the European Commission pointed out that key legislation on alternative dispute resolution between businesses and their customers should include 'an electronic commerce dimension'.[89] Two years

[87] Council of the European Union, 'Multi-annual European e-Justice Action Plan 2009–2013' (Action Plan) 2009/C 75/01 https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A52009XG0331%2801%29 accessed 11 July 2024.
[88] Ibid para 22.
[89] European Commission, 'Single Market Act. Twelve levers to boost growth and strengthen confidence "Working together to create new growth"' (Communication) COM/2011/0206 final https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52011DC0206 accessed 11 July 2024.

later, Regulation No 524/2013 of the European Parliament and of the Council setting out the European Online Dispute Resolution (ODR) platform acknowledges that 'ODR offers a simple, efficient, fast and low-cost out-of-court solution to disputes arising from online transactions'.[90] The Regulation on consumer ODR applies to 'out-of-court resolution of disputes concerning contractual obligations stemming from online sales or service contracts between a consumer resident in the Union and a trader established in the Union'.[91] The European ODR platform[92], developed by the European Commission, is a multilingual platform independent from any trader and allows consumers to solve their problem directly with the trader or with the aid of an approved dispute resolution body free of charge or at a low cost. Complaints are to be submitted electronically to the ODR platform, which acts more than a passive intermediary by taking the responsibility to review every complaint form to ensure it is fully completed, and to forward it without delay to the respondent party together with relevant information as to the ODR process (eg, ADR entities competent to deal with the complaint, next steps, name and contact details of the ODR contact point). As well, the ODR platform has to convey the information received from the respondent party to the complainant. Either the consumer or the trader can withdraw from the process at any time, and disputes are usually resolved within 90 days.

- The 2014–2018 Strategy on European e-Justice[93] pushes the 2009–2013 Action Plan further while emphasizing the voluntary participation of the Member States in European e-Justice projects, except where otherwise required by a specific European Union legislative instrument.[94] The European e-Justice Portal is envisioned as a 'one-stop shop'[95] providing 'information to citizens, businesses and legal practitioners about the law of the EU and its Member States' as well as 'other related information at national, European and international level in the field of justice',[96] which includes access to relevant national databases. The portal is but one aspect of the European e-Justice strategy. Other initiatives focus on improving the interoperability of legal data throughout the European Union, building up the European semantic web as well as

[90] Regulation (EU) No 524/2013 of the European Parliament and of the Council of 21 May 2013 on online dispute resolution for consumer disputes and amending Regulation (EC) No 2006/2004 and Directive 2009/22/EC (Regulation on consumer ODR), 18 June 2013 para 8 https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1426859531321&uri=CELEX:32013R0524 accessed 11 July 2024.
[91] Ibid Art 2(1).
[92] Accessible through the official webpage of the European Commission at https://ec.europa.eu/consumers/odr/main/?event=main.home2.show accessed on 25 July 2024.
[93] Justice and Home Affairs Council (JHA), 'Draft Strategy on European e-Justice 2014–2018' (Draft Strategy) 2013/C 376/06 https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2013:376:0007:0011:EN:PDF accessed 11 July 2024.
[94] Ibid para 19.
[95] Ibid para 32.
[96] Ibid para 33.

strengthening the protection of personal data and the interconnection of national registers (eg, insolvency, land, business) and European-level networks in civil, commercial and criminal matters.

The multi-annual action plan implementing the 2014–2018 strategy[97] contains a list of priority projects aimed at improving access to information through the e-Justice Portal and the interconnection of electronic national registers. Other projects considered to be 'of particular importance'[98] involve enabling an interactive access to courts and procedures in cross-border litigations, including the availability of dynamic forms, ODR, and e-Service of documents. The use of videoconferencing technologies though was restricted to communication between judicial authorities.

- The 2019-2023 European Strategy on Cyberjustice recognizes the importance of carrying out digitized procedures and electronic communication 'in the efficient functioning of the judiciary in the Member States'.[99] To this end, the strategy advocates a digital-by-default approach, so to provide 'citizens and businesses with the option to interact digitally with authorities',[100] and to guarantee 'legal certainty and seamless interactions in a national and cross-border context'.[101] The triple objective of the e-justice project is restated: (1) improving access to judicially-relevant information, (2) furthering dematerialization of (extra)judicial proceedings and e-communication between stakeholders (eg, judicial authorities, citizens, practitioners), (3) ensuring the interoperability of national e-Justice systems.

  The consequential action plan[102] outlines priority projects related to the ongoing development of the e-Justice Portal, including new features (eg, central query tool), more dynamic functionalities (eg, e-Payment) and updated static content (eg, Small Claims Wizard). The use of artificial intelligence and blockchain for justice is notably mentioned for the first time. Of particular interest is the development of AI-tools for case law analysis, implementing a Chatbot for the e-Justice Portal, and assessing the feasibility of including blockchain technologies in e-Justice. The use of (cross-border)

[97] Justice and Home Affairs Council (JHA), 'Multiannual European e-Justice Action Plan 2014–2018' (Action Plan) 2014/C 182/02 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014XG0614(01)&from=HU accessed 11 July 2024.
[98] Ibid para 36(b).
[99] Justice and Home Affairs Council (JHA), '2019–2023 Strategy on e-Justice' (Strategy) 2019/C 96/04 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52019XG0313(01)&rid=7 accessed 11 July 2024.
[100] Ibid para 11.
[101] Ibid para 11.
[102] Justice and Home Affairs Council (JHA), '2019–2023 Action Plan European e-Justice' (Action Plan) 2019/C 96/05 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52019XG0313(02)&rid=6 accessed 11 July 2024.

videoconferencing would be extended to communication between citizens, practitioners and judicial authorities. Among other innovative projects are the development of ODR for small claims, the deployment of e-Expertise enabling paperless exchanges in judicial expertise procedures, and the design of a voice recognition tool for automatic transcription in judicial proceedings.

- In light of the newest developments in the context of the digital transformation and innovative technologies, the 2024–2028 European e-Justice Strategy[103] focuses on effective protection of fundamental rights and principles, access to justice, people centricity, bridging the digital divide, digital empowerment of users, and sustainability. In particular a 'digital by default' approach is favoured so to avoid redundant procedures, unnecessary burdens to citizens, and reduce paperwork. In this regard, key working areas include the continued development of the e-Justice Portal, electronic access points, real time (RT) applications, e-CODEX, and data-driven justice.

63 We can thus see a distinct evolution, throughout the development of the European e-Justice Project, from technologies viewed as an asset to technologies becoming a necessity for the administration of justice.

1.3.2.2 The Chinese 'Intelligent Court' Project and the Rise of Chinese Internet Courts

64 In China, the 'Intelligent Court' Project[104], as outlined in a 2017 keynote speech of Chief Justice Qiang Zhou, has been driven by a top-down approach from the Supreme People's Court of China (SPC).

65 Considered a national priority, the Project is aimed at addressing concerns over access to justice and the need to align China's legal system with technological progress. It has begun on an incremental basis well before the year 2017. The following feature among the main achievements so far of the 'Intelligent Court' Project:

- Digitalization of Court Files: The launch of the 'China Judgments Online' website[105] in July 2013 allows an easy nationwide access to digitalized court files. Such an extensive database has proven useful not only to the general public, but to the judiciary itself

[103] Council of the European Union, 'European e-Justice Strategy 2024–2028' (Strategy 17 November 2023) 15509/23.
[104] Cf Z Wang (n 26).
[105] Accessible through the official site at https://wenshu.court.gov.cn/ accessed on 25 July 2024.

with the mining of 'judicial big data' [106] to uncover meaningful trends in the adjudication processes and results.

- Launch of the Inter-Court Online Network and Self-Help Tools[107] for litigants and the General Public: The Inter-Court Online Network is a working platform developed in 2018 by the SPC which connects across every courtroom in China so that judges can work together and exchange in real time. 'Someone sitting in an office of the SPC, simply through the click of a mouse, can livestream the proceedings of any given courtroom in the nation'.[108] Beside the Inter-Court Network, the public's access to judicial information has been substantially eased by several gateway websites that not only provide for information on court processes and procedures [109] – including enforcement procedures and defaulted debtors' information and online access of judgments delivered nationwide [110], but can also broadcast live trials across the country[111].

- Development of Legal AI Software and Programs: the added value of automation rests in expediting case management, trial transcriptions (speech recognition), and case-law research and analysis. Speed and efficiency are key, but also consistency and accountability of the judiciary. By developing its Judicial Accountability System (JAS), the SPC hopes to standardize rulings and to ensure that like cases would be treated alike, that is, similar fact situations would be assessed in light of the same applicable laws. The JAS cover both civil and criminal spectra, and extract the essence of different cases on four axes: i) the nature of the case; ii) the relevant facts; iii) the issues in disputes; and iv) the applicable law. Preliminary results are encouraging, with an overall accuracy rate of 63.7% for notification on similar cases, while the percentage reaches to 85.5% for the top ten types of civil and criminal cases.[112] However, the technology needs improvements to gain popularity among Chinese judges.

- E-Service of Judicial Documents: (Manually) serving document throughout China had been both cumbersome and time-consuming. While accounting for up to 80% of the workload of clerks and assistants in some Chinese jurisdictions, the serving process could take 'anywhere from a few days (by regular mail) up to three months (by public

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[106] Z Wang (n°26) 7 (pdf).

[107] J Tan, 'Legal Self-help Tools in China' (*Cyberjustice Laboratory*, 22 February 2022) www.cyberjustice.ca/en/2022/02/22/legal-self-help-tools-in-china/ accessed 11 July 2024.

[108] Z Wang (n 26) 8 (pdf).

[109] China Judicial Process Information Online accessible at https://splcgk.court.gov.cn/gzfwww/ accessed on 25 July 2024.

[110] Accessible through the official webpage https://wenshu.court.gov.cn/ accessed 25 July 2024.

[111] China Court Trial Online accessible through https://tingshen.court.gov.cn/ accessed 25 July 2024.

[112] Z Wang (n 26) 9 (pdf).

announcement) to complete'.[113] Serving by fax or email has been limitatively allowed since 2012; and by 'mobile communication', since 2015.

66 In the wake of the 'Intelligent Court' Project, Internet courts have been implemented throughout China under the aegis of the SPC. According to their founding provisions drafted by the SPC, Internet courts are designed to handle e-commerce disputes over sales of goods and services, copyright and domain-name disputes, property or personal right infringements on the Internet, as well as other public interest lawsuits and public mismanagement allegations arisen from the use of Internet.

67 The Hangzhou Internet Court[114], established on 18 August 2017, is a multilingual[115] litigation platform which provides for a host of judicial services from the initial filing of complaints to e-hearings and the enforcement of final judgments. E-evidence tendered in the course of litigation are uploaded, certified and stored on a blockchain after the Hangzhou Internet Court first accepted the use of blockchain in judicial proceedings in June 2018, holding that 'blockchain technology, based on its characteristics of distributed storage, tamper-proof mechanism and traceability, enjoys advantages in the fixation, preservation and extraction of e-evidence'.[116] Every step taken in the course of enforcement proceedings is as well recorded on the blockchain for evidence sake. The Hangzhou litigation platform includes an online alternative dispute resolution section[117] wherein (human) mediators can be assigned to cases and help resolve outstanding issues through online mediation.

68 The Beijing Internet Court[118], founded on 9 September 2018, is a first-instance court and integrated e-litigation platform. It includes a host of technologically-advanced functionalities such as facial recognition for party identification purposes, online electronic signature, litigation risk assessment, automatic pleading generation assistance, real-time court transcription, judgment draft assistance, and simultaneous e-delivery of litigation-related documents to all parties. Apart from e-adjudication, the platform offers both pre- and pending litigation alternative dispute resolution services. Also, e-documents can be uploaded on the blockchain before or pending litigation for authentication purposes. A

[113] Ibid 10 (pdf).

[114] The official webpage of Hangzhou Internet Court accessible at https://www.netcourt.gov.cn accessed on 25 July 2024.

[115] Including simplified Chinese, English, and three minority languages of China. Only the simplified Chinese version of the platform is complete to date.

[116] V Chan and AM Koo, 'Blockchain Evidence in Internet Courts in China: The Fast Track for Evidence Collection for Online Disputes' (*Lexology*, 15 July 2020) www.lexology.com/library/detail.aspx?g=1631e87b-155a-40b4-a6aa-5260a2e4b9bb accessed 11 July 2024.

[117] Hangzhou Internet Court (n 114).

[118] The official webpage of Beijing Internet Court accessible at https://www.bjinternetcourt.gov.cn/ accessed on 25 July 2024.

specific e-workspace is reserved for judges, and the platform links to other gateway websites.

69 The Guangzhou Internet Court[119] is established shortly after the Beijing Internet Court, on 28 September 2018. The Court makes use of new technology platforms and applies rules in litigation, arbitration, and governance adapted to the internet. Among the latest judiciary technologies, we may name the 'e-chain smart enforcement' platform – which allows a full e-management of enforcement proceedings from the filing of enforcement cases to the coordinated search of judgment debtor and their property locations; and the 'e-chain cloud mirror' smart enforcement analysis system – which makes use of big data technology to monitor the whereabouts of judgment debtors, keep track of their financial situations and assess their ability to pay through mining their payment activities on mobile devices, e-commerce platforms and other consumption patterns; the use of AI would also help to devise enforcement plans and choose the most suitable enforcement measures in light of all the available debtor information.

70 The three Internet courts have jurisdiction over their own city. E-hearings are broadcasted live on the gateway China Court Trial Online website mentioned above[120]. (Note that 'all three Chinese internet courts are located in cities with giant tech companies and are supported in part *by* those tech companies'[121]).

71 Aside from the SPC, the China Ministry of Justice launched the China Legal Services Platform[122] on 20 May 2018. Aside from general information on lawyer and notary services, alternative dispute resolution mechanisms, and arbitrators' search, this platform offers free legal consultation powered by AI tools or human dedicated staff members on a variety of topics from family matters to criminal accusations. The smart consultation option works best with uncontested fact situations that can be clearly answered on a multiple-choice format. In case of more ambiguous fact situations, one can leave a detailed message on the dedicated space of the website and await for a detailed answer from one of the staff members. The answers provided are then shared anonymously on the website for general consultation. There is also a Q/A section that provides general and easy-to-read legal information on different fields of law such as consumer protection, food safety, contract law, women's rights, youth protection legislation, and labour standard regulations.

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[119] The official webpage of Guangzhou Internet Court accessible at https://www.gzinternetcourt.gov.cn accessed on 25 July 2024.

[120] China Court Trial Online (n 111).

[121] Z Wang (n 26) 12 (pdf).

[122] China Legal Services Platform accessible at http://www.12348.gov.cn/#/homepage accessed 25 July 2024.

72 Whether it be the SPC or the Ministry of Justice, the move toward cyberjustice in China has thus been driven from the start by the government rather than non-profit private corporations.

1.3.2.3 The USA and Canadian Experiences: Incremental Attempts to Judicial Reforms

73 Instead of a top-down uniform approach towards cyberjustice, moves turned out to be more incremental in federal States without a centralized government and governance framework. This is the case in the USA and Canada.

74 The *USA's example* serves as an eloquent case study. There is no *a priori* overarching strategy or multi-annual action plan for cementing the alliance between courts and technologies. That being said, American courts and tribunals have been facing over the years with a growing amount of digital evidence from mobile devices, social media and the Internet.[123] This trend has led to many judicial rulings on their admissibility, probative value, and persuasive weight. Empirical studies on federal appellate decisions have found that an overwhelming percentage (70%-89%) of reported criminal cases involving the use of digital evidence relate to search and seizure of child pornography materials.[124] Challenges to digital evidence on appeals most frequently concern the sufficiency of evidence (for conviction) and probable cause (to search for evidence of crime or criminal activity). Although the Federal Rules of Evidence had been first adopted in 1975 and had occurred little change related specifically to digital evidence *per se*, the advent of computer forensics and digital evidence have reshaped and refined applicable legal principles in multitudinous judicial pronouncements concerning notably the scope of the Fourth Amendment (protection from unreasonable searches and seizures by the government) and the application of the hearsay rule. That being said, prior to 2015, digital evidence 'does not seem to play a large role in federal criminal appeals' since only 147 out of the 45,030 federal reported criminal appeals cases for the period 2010–2015 raise at least one legal issue related to digital evidence.

75 Since 2014, courts in some American jurisdictions have been piloting ODR programs on a voluntary basis in partnership with private companies such as Tyler Technologies and Matterhorn. According to the National Center for State Courts (NCSC), court-annexed ODR can be distinguished from other technology-supported mechanisms by three key features:

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[123] J Lane, *The Digital Street* (Oxford University Press, 2018).

[124] M Novak, 'Digital Evidence in Criminal Cases Before the U.S. Courts of Appeal: Trends and Issues for Consideration' (2020) 14(4) Journal Digital Forensics, Security & Law 1, 10. The results may be cued though as the keyword search specifically included 'child pornography' apart from other technologically-related terms such as 'Cell Phone', 'GPS', 'iPhone', 'Chat Log', and 'Computer Forensics'.

- The first is that the program operates exclusively online. In contrast to other court programs that provide an online interface with which to accomplish discrete tasks (eg, e-filing, video hearings), ODR users do not otherwise interact with the court for traditional in-court procedures or events.

- The second is that the program is explicitly designed to assist litigants in resolving their dispute or case, rather than a technology platform to support judicial or court staff decision-making. Dispute resolution inherently includes the potential to challenge the validity of claims or to raise affirmative defences; court-related ODR is not merely a platform for defendants to negotiate a payment schedule to satisfy debts.

- Third, the program is hosted or supported by the judicial branch. It is not a form of private ADR, but instead integrates and extends dispute resolution services offered by the judicial branch into digital space to serve citizens efficiently, effectively, transparently, and fairly.[125]

76 As of the end of 2019, 66 active court-annexed ODR sites are active across 12 states; two-thirds of which were launched between 2018–2019.[126] Case types for which ODR is available include traffic violations, parking tickets, warrants for failure to pay fines or costs, certain criminal matters, small claims, civil (consumer) debts, divorce and family law, landlord tenant disputes, driver license. Most of the court-annexed ODR systems implemented so far allow for electronic document management, uploading of documents by parties/litigants, generation of court-approved documents and reviewing of the outcome documents by judges or court administrators.[127] Some provide litigants with legal information as well as a mechanism to pay fines and fees online, or are integrated with the courts' case management system. Only a few (30%) enable parties to caucus with lawyers or a neutral third party.[128]

77 Conclusions drawn from diverse pilot program studies determined that ODR is indeed 'a viable alternative to traditional case adjudication methods for certain case types and can provide courts with an innovative way to increase access to justice while improving administrative efficiencies'.[129] In contrast, the Florida Courts' 2021 pilot study does not

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[125] National Center for State Courts (NCSC), 'What is ODR?' <www.ncsc.org/odr/guidance-and-tools> accessed 11 July 2024.

[126] American Bar Association Center for Innovation, *Online Dispute Resolution in the United States* (ABA Center for Innovation, September 2020) 3 www.americanbar.org/content/dam/aba/administrative/center-for-innovation/odrvisualizationreport.pdf accessed 11 July 2024.

[127] Ibid 10.

[128] Ibid 10.

[129] Commission on Trial Court Performance and Accountability and Committee on Alternative Dispute Resolution Rules and Policy, *Online Dispute Resolution Pilot Program Report* (Recommendations from the

recommend the use of ODR for highly complex cases, disputes involving more than two parties or an insurer, probate or guardianship conflicts, criminal cases or any other matter involving violence, threats to physical well-being or security.[130]

78 That being said, the term ODR is not yet defined in any state statute or rule of procedure. It is recommended that such a definition be soon codified so to distinguish ODR from other (alternative) method resolution mechanisms.[131] Proposed amendments include:

> Florida Workgroup
>
> a) define ODR as a platform hosted and supported by the judicial branch that provides an online forum where users can resolve legal disputes using technology-assisted negotiation tools; b) require parties to provide an email address as a method of contact at the time the case is filed; and c) establish specific authority for the trial courts to offer online dispute resolution service that include a vendor processing fee. [132]

79 Prior to the pandemic, remote participation 'has occurred at an increasing rate over the last several years'. [133] Video conferencing was routine 'in criminal arraignments and presentments, in status hearings and review hearings in dependency cases, and for foreign language translators in remote locations', [134] but has remained occasional in civil and criminal trials.

80 It was not until the COVID-19 pandemic that the federal Coronavirus Aid, Relief and Economic Security Act [135] allowed for the use of video or telephone conferencing for preliminary criminal hearings, including detention hearings, initial appearances, arraignments, misdemeanour pleas and sentencing, and non-trial proceedings under the Federal Juvenile Delinquency Act.[136] The permission is worded under restrictive conditions and is conditional on the approval of the chief judge of the district courts upon application of the Attorney General or on motion of another judge or justice of the same court. The

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Online Dispute Resolution Workgroup, January 2021) 6. See also P Hannaford-Agor and others, *Impact of the Utah Online Dispute Resolution (ODR) Pilot Program: Final Report* (National Center for State Courts, 10 December 2020) 18 ('The ODR pilot project was an unqualified success for the court[…]') https://www.ncsc.org/__data/assets/pdf_file/0025/57823/NCSC-UT-final-2020.pdf accessed 11 July 2024.

[130] Commission on Trial Court Performance and Accountability and Committee on Alternative Dispute Resolution Rules and Policy (n 118) 32–33.

[131] Ibid 33.

[132] Ibid 33.

[133] Judge H B Dixon Jr (n 37).

[134] Ibid.

[135] Coronavirus Aid, Relief, and Economic Security (CARES) Act (US).

[136] Ibid Sec 15002(b).

newly introduced federal provisions as well allow for felony pleas and sentencing being conducted by video or telephone conference, if the plea or sentencing in a particular case be found not be able to 'be further delayed without serious harm to the interests of justice'.[137]

81 Among state courts, remote trials have been allowed at varying degrees. As illustrated by Michael Hartman for the National Conference of State Legislatures (NCSL):

> California and Florida have allowed local courts discretion to hold remote civil jury trials, and the Arkansas Supreme Court has allowed civil trials to be carried out remotely. According to the Texas Supreme Court, judges may conduct remote jury proceedings without the consent of the parties – except in bailable criminal cases – as long as the court considers any related objection or motion within seven days of the proceeding. The court must also ensure that all potential and selected petit jurors have access to technology needed to participate remotely.[138]

82 With the opening of virtual courtrooms come a widening virtual media access to remote hearings. Securing a meaningful media coverage of remote proceedings requires some technical adjustments (eg, preset the maximum number of participants allowed in different virtual hearing rooms), and new restrictions being monitored such as the granting of permissions to record / broadcast (live) proceedings, or the taking of photos and screen captures. North of the USA border, noteworthy initiatives are being implemented across different Canadian provinces.

83 In the most western Canadian province of British Columbia (BC), the Civil Resolution Tribunal (CRT)[139] is a statutory[140] online administrative tribunal fully integrated within the BC public justice system. To date, this Canada's first online tribunal has jurisdiction over claims involving vehicle accidents, small claims, strata property (condominiums), and incorporated BC societies and community services cooperatives. Every CRT claim path starts with the Solution Explorer, a self-help tool which provides free and anonymous legal information and options based on users' answers. At the negotiation stage, litigants are being offered a secure and confidential negotiation platform. As a settlement incentive, the CRT application fee is refunded to the parties should they reach an agreement at this negotiation stage. Otherwise, the case is assigned to one of the CRT case managers who serve as neutral third parties in order the facilitate the dispute settlement process. Should they succeed in

[137] Ibid Sec 15002(c).

[138] M Hartman, 'What Social Science Can Tell Us About Remote Jury Trials' (National Conference of State Legislatures, 18 May 2021) <www.ncsl.org/research/civil-and-criminal-justice/what-the-social-sciences-can-tell-us-about-remote-civil-jury-trials-magazine2021.aspx> accessed 11 July 2024.

[139] The official webpage of Civil Resolution Tribunal accessible at https://civilresolutionbc.ca/.

[140] Established by the Civil Resolution Tribunal Act (British Columbia, Canada).

reaching an agreement at the facilitation stage, a written agreement ensues, which can be turned into a court-enforceable consent resolution order. If not, one CRT member (distinct from the facilitator) will make an enforceable decision based on applicable law and available pieces of evidence.

84 Likewise, the Ontario Condominium Authority Tribunal (CAT) prides itself on being the first fully online administrative tribunal (<https://www.condoauthorityontario.ca/tribunal/>) with the statutory authority to adjudicate condominium-related disputes. The CAT process makes use of an ODR platform allowing for case filing to online hearings. As will be detailed later on, the CAT shares distinctive features of the next phase of Cyberjustice 3.0.

85 While the BC CRT and the Ontario CAT are administrative tribunals, the Quebec Consumer Protection Office (OPC) is a non-judicial public body dedicated in monitoring merchants' activities and defending consumers' interests. Since November 2016, the OPC too has been using an online ODR tool, PARLe Consumer,[141] to help resolve disputes between consumers and merchants in a quick and affordable way. Unlike the CRT and the Ontario CAT, PARLe Consumer only provides for an alternative dispute resolution process – including the conduct of negotiation and mediation, as the OPC is not empowered to make binding or court-enforceable decisions. Since its launch in 2016, the PARLe Consumer platform has been praised with a dispute settlement rate of more than 70% and a user satisfaction rate averaging 90%.[142]

86 In the wake of the COVID-19 pandemic, the province of Nova Scotia has launched an eCourt pilot program within the Family Division of its Supreme Court (<www.nsfamilylaw.ca/court-information/ecourt-service>). The program consists of 'an online platform for judicial adjudication and decision making, case management and settlement conferencing', allowing for 'online chat exchange between a Judge and legal counsel for the parties to a dispute'.[143] The project is currently open to represented parties only with a view of expanding its scope to self-represented litigants in the future. During the initial phase of

[141] *Office de la protection du consommateur* (Consumer protection office), 'About the Office. What is Parle consommation?' https://www.opc.gouv.qc.ca/en/opc/parle/description/ accessed 11 July 2024.
[142] Ibid.
[143] NC Matthews, *eCourt Frequently Asked Questions* (Supreme Court of Nova Scotia (Family Division) Ecourt Pilot Project 2020) 2 https://www.courts.ns.ca/sites/default/files/courts/Family%20Division/NSSCFD_eCourt_FAQs_March_2021.pdf accessed 11 July 2024.

deployment, processing time for case management conferences conducted through the eCourt Service has been shown to improve by 65 % compared to in-person conferences.[144]

87 Both the Ontario CAT's and the Quebec OPC's ODR platforms have been developed by the Cyberjustice Laboratory,[145] a research center based in the Université de Montréal.

88 As well, other provinces are in the process of assessing the opportunity of implementing ODR platforms, including the province of Saskatchewan with its Ministry of Justice eJustice initiative.[146]

89 Aside from these ODR initiatives, again there is no national unifying theme nor set agenda on the alliance between technologies and Canadian courts. Whereas the pandemic era prompted an unprecedented surge of virtual hearings and paperless proceedings, court technology in Canada had largely remained 'in its infancy'. [147] Up until recently, videoconferencing and remote testimony have been allowed only in exceptional cases.[148] In spite of access-to-justice imperatives.[149] any altering of traditional in-person hearings in favour of a widening use of technological alternatives beyond time- and scope-restricted pilot projects[150] had been met with suspicion and little incentive.

90 It takes nothing less than a public health emergency to skyrocket awareness of the need to pre-empt future public crises from interfering with courts' normal operations. One notable

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[144] Service Nova Scotia and Internal Services, 'Online Dispute Resolution for Family Legal Matters a First in Canada' (News release, 23 October 2020) https://novascotia.ca/news/release/?id=20201023002 accessed 11 July 2024.

[145] Cyberjustice Laboratory https://www.cyberjustice.ca/en/ accessed 11 July 2024.

[146] C Richardson and others, *Examining Virtual Facilitation of Legal Processes in Saskatchewan: An exploratory Inquiry* (the 10th Annual Dean's Forum on Access to Justice and Dispute Resolution, 10 March 2022) https://law.usask.ca/research/research-centres-and-initiatives/examining-virtuation-facilitation-of-legal-processes-in-saskatchewan2.pdf accessed 11 July 2024.

[147] J Bailey and J Burkell, 'Implementing Technology in the Justice Sector: A Canadian Perspective' (2013) 11(2) Canadian Journal of Law and Technology 253.

[148] R Francis, *Universal Design and Videoconferencing at Tribunals: Improving Access from Day One* (Paper presented to the Council of Canadian Administrative Tribunals Annual Conference, 24 February 2015); J Borkowski, 'Court Technology in Canada' (2004) 12(3) William and Mary Bill of Rights Journal 681.

[149] J Bailey, J Burkell and G Reynolds, 'Access to Justice for *All*: Towards an "Expansive Vision" of Justice and Technology' (2013) 31(2) Windsor Yearbook of Access to Justice 181.

[150] See for examples Court of Appeal for British Columbia, *Webcasting Pilot Project. October 2019* www.bccourts.ca/Court_of_Appeal/webcast/webcasting_pilot_project_public_report.pdf accessed 11 July 2024; Ontario Courts, 'Superior Court of Justice Video Conferencing Pilot Project' (launched on 28 July 2015) www.ontariocourts.ca/scj/practice/video-conferencing/ accessed 11 July 2024; A Fieldberg, 'Chief Justice outlines courtroom camera pilot project' *CTV News* (15 April 2014) https://winnipeg.ctvnews.ca/chief-justice-outlines-courtroom-camera-pilot-project-1.1777031 accessed 11 July 2024; Provincial Court of Alberta, 'Provincial Court of Alberta Court Case Management Program' https://albertacourts.ca/pc/about-the-court/innovation/ccm accessed 11 July 2024.

result has been the introduction of Bill C-23[151] on 24 February 2021 (House of Commons) and Bill S-4 on 8 February 2022 (received royal assent on 15 December 2022)[152] to enhance the use of technology in criminal court contexts, including: allowing for the conduct of jury selection process via videoconference, expanding the types of search warrants, authorizations and orders to be applied for and issued through the telewarrant process, and granting discretion to criminal courts to order remote appearance of the accused at preliminary inquiries, trials, and plea as well as sentencing hearings.

1.3.3 Phase / Level 3: Cyberjustice 3.0

91 While this second phase hovers still at an experimental stage, a third phase can already be foreseen as the golden age of cyberjustice, where the alliance between the administration of justice and digital tools becomes so compelling and efficient as to render any idea of severance unthinkable.

92 As envisioned by the European Commission for the Efficiency of Justice (CEPEJ), '[t]hose seeking to modernize the justice system through information technology need to develop a vision of the judiciary that goes beyond a narrow, project-based approach'.[153] The advanced ICT tools critical to bringing the next era of cyberjustice can roughly be grouped into three categories:

- decision support technologies which include databases of court decisions, the existence of a national record of criminal convictions, writing assistance tools and voice recording including voice recognition features;

- court and case management systems, which include case management systems (including their interoperability, active case management and statistics functionalities), budgetary and financial management systems of courts, and judges and administrative staff workload assessment tools;

- communication between courts, professionals and/or court users, which includes the possibility of submitting a case electronically, carrying out communication exchange within the various phases of a case between the court, parties, lawyers and other

[151] An Act to amend the Criminal Code and the Identification of Criminals Act and to make related amendments to other Acts (COVID-19 response and other measures) Bill C-23 (2020-2021) (first reading, 24 February 2021) (Canada).
[152] An Act to amend the Criminal Code and the Identification of Criminals Act and to make related amendments to other Acts (COVID-19 response and other measures) (Canada).
[153] European Commission for the Efficiency of Justice (Council of Europe), *Guidelines on how to drive change towards Cyberjustice. Stock-taking of tools deployed and summary of good practices* (Document) CEPEJ (2016)13 para 117 https://rm.coe.int/16807482de accessed 11 July 2024.

professionals, the existence of on-line specialized procedures, videoconferencing and recording of hearings.[154]

93 Compatibility and interoperability across (these) systems is key. A merely project-based approach bears the risk of creating technology-siloed systems that cannot operate / communicate with each other and which, for this reason, cannot be further improved or expanded without starting all over again.

94 To date however, the focus revolves around adding digital appendices and extensions to existing courtrooms and courthouses, even though the prevalent trend towards digitalization may call into question the continued relevance of the brick-and-mortar courthouses themselves as the sources of justice.

95 Instead, a truly people-centered approach towards cyberjustice 3.0 should challenge the way in which our justice is delivered at a more fundamental level. As true as the medieval king was the fountain of justice in bygone days, our modern justice ultimately comes from individual judges or judicial panels making specific rulings upon proven facts. Justice by itself does not refer to a specific building, require a particular decorum, nor should it compel in all cases the physical assembly of all parties involved at the same time or in the same geolocation.

96 In this regard, the Ontario CAT pioneered by being the first completely online, no-premise tribunal in Canada (<www.condoauthorityontario.ca/tribunal/>). The CAT was established in 2017 to adjudicate prescribed disputes between condominium unit owners and corporations (eg, corporation records, nuisance complaints, pet allowance, parking and storage). Rather than brick-and-mortar courtrooms, the CAT makes use of an online dispute resolution system (CAT–ODR) developed in partnership with the Cyberjustice Laboratory.[155] From the initial filing of cases to online hearings and the release of final decisions, everything is managed, negotiated, settled, or decided online. Indeed, justice is about:

- securing to all members of society a meaningful access to law and neutral adjudicating third parties should a dispute arise;

- giving to all parties involved in the dispute a meaningful opportunity to be heard and to voice their concerns;

[154] European Commission for the Efficiency of Justice (Council of Europe) (n 42) 99.
[155] Cyberjustice Laboratory https://www.cyberjustice.ca/en/ accessed 11 July 2024.

- providing for the most reliable way of tending evidential facts and of assessing contradictory fact versions or pieces of evidence;

- adjudicating conflicting positions in light of proven facts and in accordance with applicable laws.

97 Should a technology-powered justice system better achieve these objectives underlying all justice systems than our traditional courtrooms themselves, at least for certain cases, there is no reason to maintain traditional courtrooms at the expense of cyberjustice. Should a technology-mediated justice administration better address specific litigants' concerns over the reliability of pieces of evidence or the impartiality of the adjudicators, there is no reason to impede the drive toward cyberjustice.

1.4 Major Issues and Shortcomings at Stake

98 That being said, digitalizing our justice systems is a challenging process, which will be addressed more specifically in the following chapters. At this stage, it is important to distinguish between 'transitory' shortcomings and more 'permanent' issues relating to the implementation of cyberjustice.

99 Among the 'transitory' shortcomings (1), the following can be spelled out: digital illiteracy of applicants (off-liners), (in)efficiency of services and of technological infrastructure, need for specialized training for judges and lawyers, who should be able to scrutinize the correct flow of proceedings and decision-making processes with the large-scale implementation of information technologies, and even more so with the massive introduction of AI techniques.

100 The most 'permanent' challenges (2) include procedural safeguards – including the right to public proceedings and transparency, the impact of ICT and AI uses on fundamental rights (and the need to establish new rights and safeguards, such as algorithmic neutrality and algorithmic transparency) and the risks in the field of data protection, the latter being a sort of 'elephant in the room' when addressing cyberjustice. In this first chapter, key elements will be assessed, while specific developments will be dealt with in subsequent chapters.

101 In either case, we are indebted to research institutes and soft law tools for the development of best practices.

1.5 Transitory Challenges

102 Digital illiteracy can be defined as a lack of 'interest, attitude and ability of individuals to use digital technology and communication tools appropriately to access, manage, integrate, analyse and evaluate information, construct new knowledge, and create and communicate

with others'.[156] In an educational perspective, the Canadian province of British Columbia's Digital Literacy Framework has identified six feature skills of digital literacy as related to (a) research and information literacy, (b) critical thinking, problem solving, and decision making, (c) creativity and innovation, (d) digital citizenship, (e) communication and collaboration, (f) technology operations and concepts.

103 In this regard, one of the amendments adopted by the European Parliament on 14 June 2023 to the European Commission (EC)'s initial Proposal for an Artificial Intelligence (AI) Act of 21 April 2021 proffered a functional definition of 'AI literacy' as encompassing 'the teaching of basic notions and skills about AI systems and their functioning, including the different types of products and uses, their risks and benefits' (Art 4b). This functional definition has not survived through the final version of the Act approved on March 2024. Article 4 thereof rather provides for a positive obligation on providers and deployers of AI systems who

> shall take measures to ensure, to their best extent, a sufficient level of AI literacy of their staff and other persons dealing with the operation and use of AI systems on their behalf, taking into account their technical knowledge, experience, education and training and the context the AI systems are to be used in, and considering the persons or groups of persons on which the AI systems are to be used.

104 Besides AI, digital literacy in the judicial context thus encompasses both digital knowledge and awareness as to the impact of information technologies on our daily lives, practice of law, evidence tendering, and court management process. Commentators have listed the so-called '5As of Judicial Technological Competence' as requiring the following : (a) ensuring adequate acquaintance with commonly used technological tools, (b) being alert to technological risks, (c) acting ethically on and through social media, (d) becoming proficient in self-assessing and monitoring their own judicial behaviour through the use of judicial analytics tools, (e) staying informed on the use of automated decision-making and AI tools in the justice system.[157]

105 That being said, apart from anecdotal accounts on the increasing digital awareness and skills of judges[158] and practitioners, there are no systematic studies on this phenomenon. Whilst

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[156] British Columbia, *BC's Digital Literacy Framework* https://www2.gov.bc.ca/assets/gov/education/kindergarten-to-grade-12/teach/teaching-tools/digital-literacy-framework.pdf accessed 11 July 2024.

[157] A Salyzyn, 'A Taxonomy of Judicial Technological Competence' *Slaw* (24 June 2021) www.slaw.ca/2021/06/24/a-taxonomy-of-judicial-technological-competence/ accessed 11 July 2024.

[158] JG Browning, 'Should Judges Have a Duty of Tech Competence' (2020) 10(2) St. Mary's Journal on Legal Malpractice and Ethics 176; GC Kessler, 'Judges' Awareness, Understanding, and Application of Digital Evidence' (DPhil dissertation, Nova Southeastern University 2010); D Masuhara & Innovation, 'The Use of Technology in Courts. A View from the Bench' *BarTalk* (December 2015) www.cbabc.org/BarTalk/Articles/2015/December/Features/The-Use-of-Technology-in-Courts accessed 11 July 2024.

we may be concerned by the widening gap of digital literacy and know-how between big tech companies and best tech startups and the rest of the population, on the judicial front commentators agree on the need to provide training opportunities for the judiciary and (aspirant) practitioners[159] on the use of information technologies, to address inefficient electronic service delivery and to improve technological infrastructure used within the courthouses. Among other examples, in its Strategic Plan for Technology 2023–2026,[160] the Judicial Council of California set five technologically-related goals to improve access to justice and digital court services, that is, (a) advance the digital court, (b) promote equal access to digital services, (c) innovate through community, (d) advance IT security and infrastructure, and (e) advocate for rule and legislative changes.

1.6 Permanent Challenges

106 The rise of cyberjustice will undoubtedly have a long-lasting impact on the justice system and the administration of justice. The challenges we face may be grouped into three areas of focus:

- Adapting existing fundamental and procedural rights to the digital era;
- Managing the technologically-based risks in the field of data protection;
- Securing (new) procedural safeguards against the misuse of ICT- / AI-based technologies.

107 The content and scope of the set of fundamental rights and procedural safeguards enshrined in our current constitutional and legal instruments are not to be constructed in ways completely disconnected from the social context of the time. Even though, from an originalist standpoint, one should refer back to the original understanding of a constitutional statement at the time of its adoption, new rights and safeguards should be recognized as our technologies, societies, and justice systems progress. For instance, our open court principle should be undergoing dramatic review following the rise of social media, the increasing availability of mobile Internet, and the growth of digital data. In the common law tradition, the right to a public trial and the publicity of court records were initially recognized as a reaction to the arbitrariness and unfairness of the secretive proceedings conducted in the Star Chamber Courts of Medieval England, so as to allow public oversight vis-à-vis justice administration and delivery. In the digital age, an unconditional right to a public trial may lead to abuse should it mean an unrestricted live stream of indiscriminate court proceedings

[159] AM Beltran, *Digital Literacy for Law Students* (Fall 2017).
[160] Judicial Council of California, *Strategic Plan for Technology 2023–2026* (September 2022) www.courts.ca.gov/documents/jctc-Court-Technology-Strategic-Plan.pdf accessed 11 July 2024.

on every platform. On the other hand, it seems equally unfair – and condescending – to shield our justice administration from each and every incursion of technologies. The balance – between privacy and public access – is not exclusive to our digital age; judges and practitioners are well familiar with this necessary balancing of inconvenience in instances of confidentiality orders, (occasional) *in camera* proceedings, and publication bans. The digital age has only driven the technological revolution within the courtrooms on an unprecedented level, raising novel challenges and concerns of which well-established precedents cannot (yet) be found in our textbooks and doctrine.

108 So intricate is the commingling of judicially-relevant 'digital data' with our daily lives that one of these challenges deserves special attention: data protection. Somehow, 'digital data' is a misnomer as it blends data digitally- generated, collected, stored, transferred, and replicated, while each of these stages of data processing may bring up challenges of its own. Data transfer from a paper-based to a digital medium requires particular safeguards against data loss and compromise. Data digitally stored ask for increased cybersecurity measures against cyberthreats. In all cases, data protection refers to the process of safeguarding the integrity, confidentiality, and availability of meaningful data. *Data integrity* is important since inaccurate and corrupted data can as well mislead the courts than the public, especially as judges may turn to widely shared and commented social media posts to substantiate witness testimonies, to reconcile contradictory fact statements, to validate business profiles, or to gain an overall impression of the different trial protagonists. Warren and Brandeis' seminal 'right to be let alone'[161] paled in comparison with the 'right to be unknown' of our digital age. Indeed, data confidentiality attracts renewed interest as the web 2.0 motto 'once shared, always shared' is replacing the limited word-of-mouth communications in at astonishing speed. Since its inception, the protection of personal data has come up against the open court principle, as judicial data that relate to identifiable litigants, if undiscriminated shared and spread online, can harm them in ways unexpected at the time of litigation. Prospective employers do not have to ask for applicants' criminal records or judicial history to get them with a mouse click, and an applicant would never know of the impact of a ten-year-old newspaper snippets lost in the Internet archive. Even for professionals (eg, lawyers, clerks and judges), protecting their privacy in a publicly accessible database can be warranted without unduly interfering with the citizens' right to transparency in the judicial decision-making process. In this regard, the European ethical Charter on the use of AI within the judicial systems recognizes the need to take into account several socio-institutional factors in resolving these conflicting imperatives:

> 51. These questions do not arise in the same form everywhere in Europe and depend on the specific features of the judicial system concerned (and on the nature of the

[161] S D Warren and L D Brandeis, 'The Right to Privacy' (1890) 4(5) Harvard Law Review 193.

judiciary's career management body), the collegial nature or not of the judgment and the level of court concerned. In Switzerland, for example, where judges are elected, publication is a guarantee of transparency and social responsibility of judges vis-à-vis citizens and political groups. This information is already available in online search engines (which are not strictly speaking open data).

52. Nor do these questions arise in the same form depending on the level of jurisdiction. The value of characterizing the case-law of lower court judges may not be the same as for judges of supreme courts or international courts. For example, the European Court of Human Rights authorizes searches for judgments by the names of the judges members of the decision panel, but does not allow the calculation of statistics relating to a particular judge. On the other hand, in countries where the judicial bodies are unfamiliar with the practice of dissenting opinions (existing within this international court), it may seem unfair to assign a judge personal responsibility for a decision which he voted against during deliberation in a collegial court.[162]

109 One extension of the open court principle is the accessibility of public records such as criminal and other court records, sex offender and long-term offender registration, land and business registries. Their being publicly accessible in certain cases does not mean an indiscriminate access by any curious bystanders. Conditions should be put so to restate a balance between individuals' right to privacy and public protection imperative, such as limited access by authorized staff members only (eg, sex and long-term offender registries), upon payment of fees, or for specified purposes.

110 Beyond confidentiality protection, the right to be forgotten has come at the forefront of the Internet age to secure a relative protection against the increasingly traceability of our life path stretching beyond discrete data.[163] Restating the principle developed in a 2014 landmark CJEU case,[164] the European General Data Protection Regulation (GDPR) recognizes data subjects, in specific enumerated circumstances, the right to erasure of personal data concerning them without undue delay.[165] A limited right to erasure can also be read into other national legislations providing for the users' right to request deletion / rectification of

[162] European Commission for the Efficiency of Justice (Council of Europe), *European ethical Charter on the use of Artificial Intelligence in judicial systems and their environment* (3-4 December 2018) Appendix I 'In-depth study on the use of AI in judicial systems, notably AI applications processing judicial decisions and data' para 51–52.

[163] A Forde, 'Implications of the Right to Be Forgotten' (2015) 18 Tulane Journal of Technology & Intellectual Property 83.

[164] *Google Spain SL, Google Inc v Agencia Española de Protección de Datos (AEPD) and Mario Costeja González*, Case C-131/12 (CJEU), Judgment 13 May 2014 [ECLI:EU:C:2014:317].

[165] Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), 4 May 2016, Art 17.

their personal data or the obligation for businesses and organizations to destroy or to make anonymous personal information that is no longer required for the purposes in relation to which it is initially collected or processed.[166] Some regulations equate de-identifying or aggregating personal information with permanent deletion.

111 On the other hand, increasing data availability, while shifting the developmental focus from model-driven to data-centric AI,[167] raises new possibilities to the judicial and legal realms. Legal analytics allow for increased consistency in our case law analysis and a more efficient application of the rule of law, so to ensure that cases are treated alike in like circumstances. Besides, to the extent permitted by national law, judicial analytics[168] provide for unheard-of opportunities to gain insight into the tendencies of courts and idiosyncrasies of individual judges, practitioners, and even recurring litigants or 'big players' such as multinationals or large companies. This potential stretches beyond anecdotal accounts or gossiping curiosities, but may help to detect hidden discrimination trends or biases on a systematic or institutional level. In this regard, it is worth mentioning that a recent French law has banned the possibility of reusing magistrates' and registry members' *identity* data to assess, analyze or compare their real or hypothetical professional practices.[169] Concerns have been voiced over magistrate profiling as tending to encourage strategic 'forum-shopping' and to exercise 'algorithmically-induced' pressure to rule in predictable ways.[170] That being said, as it is currently worded such restriction should not limit the possibility of conducting comparative analytics on an anonymous cross-jurisdictional or departmental trends basis.

112 While several gains can be expected from legal / judicial data analytics, this new field of study may entail the recognition of new fundamental rights or procedural safeguards

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[166] See: 'Right to be forgotten' *Digital Watch* https://dig.watch/topics/right-to-be-forgotten accessed 11 July 2024; S Du Perron and A Nagy, 'The right to erasure of personal information in Canada: Between fact and fiction' (*BLG*, 28 May 2021) www.blg.com/en/insights/2021/05/the-right-to-erasure-of-personal-information accessed 11 July 2024; GA Brown, 'Consumers' "Right to Delete" under US State Privacy Laws' (2022) 12(102) National Law Review; R Koch, 'What is the LGPD? Brazil's version of the GDPR' *GDPR.EU* https://gdpr.eu/gdpr-vs-lgpd/#:~:text=The%20right%20to%20delete%20personal,The%20right%20to%20revoke%20consent accessed 11 July 2024.

[167] D Zha and others, 'Data-centric Artificial Intelligence: a Survey' (June 2023) https://arxiv.org/abs/2303.10158 accessed 11 July 2024.

[168] J McGill and A Salyzyn, 'Judging by the Numbers: Judicial Analytics, the Justice System and its Stakeholders' (2021) 44(1) Dalhousie Law Journal 249.

[169] *Code de justice administrative* (Administrative Justice Code) (France), Sec L10 and *Code de l'organisation judiciaire* (Judicial Organization Code) (France), Sec L111-13, as introduced by Sec 33 (V) of the *Loi n° 2019-222 du 23 mars 2019 de programmation 2018-2022 et de réforme pour la justice (1)* (Law no 2019-222 of 23 March 2019 on 2018-2022 programming and justice reform (1)) (France).

[170] A Garapon and J Lassègue, *Justice digitale. Révolution graphique et rupture anthropologique* (Digital justice. Graphic revolution and anthropological rupture) (PUF 2018).

against the misuse or abuse of ICT or AI. Expressions such as 'algorithmic neutrality' or 'algorithmic transparency' have thus recently made a foray into the legal parlance.

113 '*Algorithmic neutrality*' is less about developing perfectly neutral algorithms in every sense of the word – which is illusory –,[171] than reliable mechanisms to check for the most common sources of bias, be it incomplete or unrepresentative training data sets, biased algorithm builders and operators, or biases embedded in the algorithmic model design itself.[172] Only by being aware of our sources of error could we devise trusted bias detection and mitigation practices throughout the AI systems' life cycle;[173] hence the importance of conducting regular algorithmic impact assessments and mandatory auditing of AI systems.[174] The current AI regulations further scale up or down the assessment requirements according to the level of risk identified in specific uses of AI. According to the European Commission, a four-level risk-based approach is warranted in defining the users' rights and addressing the AI system providers' obligations.[175] Whereas AI systems that pose an 'unacceptable risk' to Union values or fundamental rights should be banned, the use of 'high-risk' AI systems are subject to strict obligations, including an ex-ante conformity assessment. Simple disclosure obligations are required for 'limited-risk' AI systems that interact with humans (eg, chatbots) or which generate /manipulate content (eg, deep fakes), while the use of "low or minimal-risk" AI systems is permitted without conditions. It is noteworthy that the use of AI by law enforcement and for the administration of justice has been classified as carrying a high-risk as per Annex III of the European Commission's proposal.[176]

114 The call for *algorithmic transparency* and *accountability* follows from 'algorithmic neutrality' and can be viewed as the digital equivalent to the right to reasoned decisions or adequate judicial reasoning. This is especially the case where litigants will be adversely affected by negative outcomes. Where machine learning is involved, the trade-off between accuracy and explainability raises further challenge to securing accountability in the AI decision-

[171] O Penel, 'Inside AI. Algorithms, the Illusion of Neutrality. The Road to Trusted AI' (*Towards Data Science*, 10 April 2019) https://towardsdatascience.com/algorithms-the-illusion-of-neutrality-8438f9ca8471 accessed 11 July 2024.

[172] C Stinson, 'Algorithms are not neutral. Bias in collaborative filtering' (2022) AI and Ethics 763.

[173] Independent High-Level Expert Group on Artificial Intelligence, 'Ethics Guidelines for Trustworthy AI' (European Commission 8 April 2019) 18 https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai accessed 11 July 2024.

[174] Law Commission of Ontario, 'Regulating AI: Critical Issues and Choices' (LCO Issue Paper, April 2021) 7 www.lco-cdo.org/wp-content/uploads/2021/04/LCO-Regulating-AI-Critical-Issues-and-Choices-Toronto-April-2021-1.pdf accessed 11 July 2024.

[175] European Commission, *Proposal for a Regulation of the European Parliament and of the Council laying down harmonized rules on artificial intelligence (artificial intelligence act) and amending certain union legislative acts* (Proposal for Regulation 21 April 2021) COM(2021) 206 final https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1623335154975&uri=CELEX%3A52021PC0206 accessed 11 July 2024.

[176] Ibid Annex III.

making process. It is unclear for the time being whether the European General Data Protection Regulation (GDPR) already provides for a right to explainable automated decisions. To be sure, data subjects are entitled under the GDPR to a 'meaningful overview of the intended [data] processing'.[177] Where exclusively automated processing is concerned, this is only allowed under strict conditions and after having implemented 'suitable measures to safeguard the data subject's rights and freedoms and legitimate interests',[178] which include the right to obtain some kind of explanation about the decision reached so to be able to challenge the decision.

115 Transparency also calls for a better education of – and understanding by – lawyers, the judiciary and litigants as to the nature and potential of the different available technological tools. A recent high-profile example would be that of a US lawyer who used ChatGPT 'in order to supplement the legal research performed',[179] and who ended up citing nonexistent precedents backed by *a priori* credible references with fictional quotes and citations in his filing to the court. This case[180] illustrates the danger for non-tech savvy legal professionals to mistake a generative AI application for a (new) research engine, whereas the former is basically a probabilistic tool trained in predicting, that is, in generating the next likely answers to the users' instructions (prompts).

116 Over the recent years the European Union has been rife with new legislative initiatives aiming at laying down harmonized rules on the use of AI systems in a wide variety of contexts including in the course of the administration of justice. As mentioned above, the European Commission (EC)'s Proposal for an Artificial Intelligence (AI) Act of 21 April 2021,[181] classifies as high-risk AI systems designed for the administration of justice and democratic processes, i.e., those "intended to assist a judicial authority in researching and interpreting facts and the law and in applying the law to a concrete set of facts." (Annex III, Art 8) Such high-risk classification entails a set of enhanced compliance and monitoring requirements by design, from the establishment of a risk management system, automatic record-keeping, and consistent performance at 'an appropriate level of accuracy,

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[177] GDPR (n 151) Art 12(7).

[178] Ibid Art 22(3).

[179] *Mata v Avianca, Inc*, Case 1:22-cv-01461 (District Court, SD New York), Affidavit of Steven Schwartz – Document #32, Attachment #1 para 6 https://www.courtlistener.com/docket/63107798/32/1/mata-v-avianca-inc/ accessed 11 July 2024.

[180] The lawyer and his law firm ('the Respondents') were sanctioned on 22 June 2023 for failure to ensure the accuracy of their filings. In addition to a penalty of USD 5,000, the Respondents were required to inform their client and the judges who names were wrongfully invoked of the sanctions imposed. The law firm took the initiative to conduct a mandatory training for all lawyers on technological competence and artificial intelligence programs: *Mata v Avianca, Inc* (District Court, SD New York) Ruling of 22 June 2023 https://www.courthousenews.com/wp-content/uploads/2023/06/chatGPT-sanctions-ruling.pdf accessed 11 July 2024.

[181] European Commission (n 162).

robustness and cybersecurity' throughout the entire lifecycle of the subject AI systems (Art 9, 12, 15), appropriate data governance and management practices (Art 10), transparency to users (art. 13), effective human oversight (Art 14), consistent performance (Art 15), all of the above as backed up by complete technical documentation (Art 11). This EC's Proposal was approved by the European Parliament on 14 June 2023 with a strong and cross-party endorsement. The version adopted by the European Parliament[182] comprises a number of significant amendments to the EC's 2021 proposal, including specific transparency and accountability requirements for 'foundation models' that underlie generative AI applications such as ChatGPT and DALL-E,[183] and not excluding assistance to be provided in the legal domain and the administration of justice[184]. On 13 March 2024, final assenting vote is given by an overwhelming majority of European lawmakers for the AI Act. The official text was published on 12 July 2024[185] and comes into force on 1 August 2024. The term 'foundation models' has been dropped in the final 2024 version; instead, a distinct chapter (Chapter V) is dedicated to 'General Purpose AI Models' (Chapter V) [GPAI Models] with obligations specific to providers thereof depending on whether the GPAI Models are considered to entail systemic risk. Besides, as per the EC's 2022 Proposal for an AI Liability Directive,[186] high-risk AI systems are further subject to an enhanced civil liability regime for damages caused to non-contractual claimants. At the request of potential claimants, a provider of such systems would have an obligation to disclose relevant evidence about a specific high-risk AI system – subject to a rebuttable presumption of fault in case of non-compliance (Art 3). Where fault is established, a rebuttable presumption of causal link is

[182] European Parliament, 'Amendments adopted by the European Parliament on 14 June 2023 on the proposal for a regulation of the European Parliament and of the Council on laying down harmonized rules on artificial intelligence (Artificial Intelligence Act) and amending certain Union legislative acts' A9-0188/2023 https://www.europarl.europa.eu/doceo/document/TA-9-2023-0236_EN.html accessed 11 July 2024.

[183] What distinguishes foundation models from other pre-trained models is the former being trained on unlabelled data for a wide range of downstream tasks, 'including some for which they were not specifically developed and trained': Ibid Amendment 99. While foundation models are not considered as high-risk AI systems, specific requirements are deemed warranted to ensure a high level of protection for fundamental rights, democracy and rule of law.

[184] R Bommasani and others, 'On the Opportunities and Risks of Foundation Models' (16 August 2021) 16 https://doi.org/10.48550/arXiv.2108.07258 accessed 11 July 2024; see also M Samwald, 'The EU AI Act needs a definition of high-risk foundation models to avoid regulatory overreach and backlash' (*Effective Altruism Forum*, 31 May 2023) https://forum.effectivealtruism.org/posts/p7qXjisiADiCBnofk/the-eu-ai-act-needs-a-definition-of-high-risk-foundation accessed 11 July 2024.

[185] Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonized rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act), 12 July 2024.

[186] European Commission, *Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence (AI Liability Directive)* (Proposal for Regulation 28 September 2022) COM (2022) 496 final.

recognized between the fault and the damages (Art 4). It would be interesting to follow on how and to what extent this civil liability regime will be translated into disciplinary liability of legal professionals who place unreasonable reliance on those AI systems. Meanwhile, the Canadian Parliament tabled on 22 November 2021 a bill on Artificial Intelligence and Data Act[187] to regulate the use of AI systems in the private sector and to require assessment and monitoring of high-impact AI systems as per the criteria to be established in regulations.

117 In the United States, with an aim as well at addressing algorithmic bias and other serious discriminatory impacts from the use of flawed algorithms or software,[188] a bill 'to direct the Federal Trade Commission to require impact assessments of automated decision systems and augmented critical decision processes, and for other purposes' (Algorithmic Accountability Act of 2022) was introduced to the US Congress in February 2022.[189] Improving on its 2019 version bearing the same name,[190] the 2022 bill would require every 'covered entity' to perform impact assessment to any deployed 'automated decision system' developed for implementation or use in an 'augmented critical decision process' (Sec 3). A 'critical decision' covers the provision of legal services, 'including private arbitration or mediation' (Sec 2(8)); and a critical decision process is augmented when it employs an automated decision system (Sec 2(1)). A 'covered entity' includes any person, partnership, or corporation that either is deemed to have a substantial sales revenue ($50,000,000 in average annual gross receipts) or equity value (greater than $250,000,000) for the previous 3-year period, or manages to identify information about a sufficiently large number of consumers and households (over 1,000,000) 'for the purpose of developing or deploying any automated decision system or augmented critical decision process' (Sec 2(7)). The impact assessment, the report thereof would have to be submitted to the Federal Trade Commission (FTC), has to be conducted in accordance with the requirements to be set out by the FTC, including the intended purpose of the automated decision system and the intended benefits of the augmented critical decision process (Sec 4).

118 In the judicial context, '*algorithmic neutrality*' and '*algorithmic transparency*' arise from concerns over maintaining an independent and impartial judiciary, especially in adjudicating

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[187] An Act to enact the Consumer Privacy Protection Act, the Personal Information and Data Protection Tribunal Act and the Artificial intelligence and Data Act and to make consequential and related amendments to other Acts Bill C-27 (2021-2022) (second reading, 24 April 2023).

[188] R Wyden, 'Wyden, Booker and Clarke introduce Algorithmic Accountability Act of 2022 To Require New Transparency And Accountability For Automated Decision System' (Press release 3 February 2022) www.wyden.senate.gov/news/press-releases/wyden-booker-and-clarke-introduce-algorithmic-accountability-act-of-2022-to-require-new-transparency-and-accountability-for-automated-decision-systems accessed 11 July 2024.

[189] HR 6580 – Algorithmic Accountability Act of 2022 (2021-2022) (USA).

[190] Which directed assessments to be conducted as regards high-risk systems only: HR 2231 – Algorithmic Accountability Act of 2019 (2019-2020) (USA).

novel cases untreated yet by well-established precedents. Even in 'ordinary' cases, a sceptical oversight is most welcome to spot relevant distinctions in new fact situations and to nuance the application of legal principles where apposite. Besides, despite the homogenizing effect of AI-powered statistics, the doctrine of judicial precedent never excludes the possibility of overturning prior case law in appropriate cases. Such instances have occurred many a time in criminal and constitutional settings with a strong social resonance and era imprint, namely, legal segregation, right to abortion, assisted suicide, and LGBTQ equality claims.

119 As technologies evolve with and within the courtrooms, virtual trials may even become a defendant's fundamental right in circumstances where in-person hearings would not meet the standard of a fair trial. The right to counsel may require reasonable cyber access to relevant legal information. In the near future (?), competent attorneys would have to crosscheck their professional legal opinion with reasonably accessible AI-powered legal analytics as part of a new standard of professional competency and good faith. Failures for judges to do so or to justify their departure from AI recommendations may be ground for appeal and bring about a miscarriage of justice. From the digitally enhanced presentation of evidence to the use of immersive virtual environments in (jury) trials,[191] from in-person to effective (remote) participation, the sky's the limit for a technologically-powered judiciary never encountered before.

2 CONCLUSION

120 'Cyberjustice' echoes an ideal, a fashionable trend, a compelling necessity, the realm of possibilities and the way to the future. It originates from an evolving social context and is tied to our technological progress.

121 As justice morphs into cyberjustice, some of our entrenched notions are challenged (eg, best evidence rule = paper originals), while new ideas emerge and are gaining recognition (eg, technology neutrality, functional equivalence, integrity and authenticity). This metamorphosis has been evolving along a three-level integration axis.

- From the early 1990s to around 2010, cyberjustice was but optional. While private initiatives were testing the added value of technology in streamlining alternative non-binding dispute resolution mechanisms, the use of

[191] K Bunker, 'From presentation to presence: Immersive Virtual Environments and Unfair Prejudice in the Courtroom' (2019) 92(2) Southern California Law Review 411; C Leonetti and J Bailenson, 'High-Tech View: The Use of Immersive Virtual Environments in Jury Trials' (2010) 93(3) Marquette Law Review 1073.

information communication technology (ICT) tools in the justice systems was only allowed tentatively and in exceptional circumstances.

- It is only recently that courts around the world are becoming more open-minded toward technology viewed no longer as an extraneous component to be added to, but instead as a welcome ally which may help addressing some of the institutional limitations of the justice systems. This second phase stretches approximately from 2010 onwards and has been exponentially powered by the COVID-19 pandemic. The maturation of technology, the advent of the social Internet and interactive applications, as well as widespread mobile connection, were key in bringing this institutional shift.

- As foreseen by authors like Susskind, there is nothing revolutionary yet in this second phase, so long as our idea of justice continues to be linked to defined geophysical locations rather than that of service delivery. In the third phase, cyberjustice means more than the affixing of never-ending digital annexes and appendices to our brick-and-mortar judicial premises. Indeed, cyberjustice is challenging the very center of gravity of our justice systems, which revolve less around the geolocation of physical courthouses than the availability – and reachability – of competent judges and judicial panels.

122 How to achieve this complete metamorphosis will be dealt with further in the subsequent chapters. There is no established precedent in the cyberjustice field. Our extant procedural safeguards and rules of procedure were devised in light of a (pre)conception of procedural fairness centered around the in-person assembly of all concerned parties, witnesses and attorneys before the physical bench. Yet this premise no longer holds in the era of cyberjustice. Cyberjustice would not just be mimicking traditional justice but will in time 'augment' and improve it.

123 How to achieve a renewed procedural fairness in different but functionally equivalent ways? This is a challenging question and calls for exciting endeavours.

ABBREVIATIONS AND ACRONYMS

AAA	American Arbitration Association
ABA	American Bar Association
ADR	Alternative Dispute Resolution
AI	Artificial Intelligence
CJC	Canadian Judicial Council
BC	British Columbia
CAT	Condominium Authority Tribunal (Ontario, Canada)
CARES	Coronavirus Aid, Relief, and Economic Security Act (US)
CEPEJ	*Conseil de l'Europe Commission européenne pour l'efficacité de la justice* (Council of Europe European Commission for the efficiency of justice)
CLI	Cyberspace Law Institute
CLIR	Council on Library and Information Resources
CRDP	*Centre de recherche en droit public* (Research Center for Public Law)
CRT	Civil Resolution Tribunal (British Columbia, Canada)
CNRS	*Centre national de la recherche scientifique* (National Scientific Research Center)
CRID	*Centre de recherches informatique et droit* (Research Center for Computer Sciences and Law)
EC	European Commission
ECODIR	Electronic Consumer Dispute Resolution
FTC	Federal Trade Commission (US)
GDPR	General Data Protection Regulation (EU)
ICANN	Internet Corporation for Assigned Names and Numbers
ICT	Information and Communication Technology
JAS	Judicial Accountability System (China)
JHA	Justice and Home Affairs Council (EU)
ML	Machine Learning
MMOG	Massively Multiplayer Online Games
NAF	National Arbitration Forum
NCAIR	National Center for Automated Information Research (US)
NCSC	National Center for State Courts (US)
NCSL	National Conference of State Legislatures (US)
NLP	Natural Language Processing
ODR	Online Dispute Resolution
OECD	Organisation for Economic Co-operation and Development

OOO	Online Ombuds Office (US)
OPC	Consumer Protection Office (Quebec, Canada)
SPC	Supreme People's Court of China (SPC)
UDRP	Uniform Dispute Resolution Policy
ULCC	Uniform Law Conference of Canada
UNCITRAL	United Nations Commission on International Trade Law
US / USA	United States of America
USD	United States Dollar
USFRCP	Federal Rules of Civil Procedure (US)
WIPO	World Intellectual Property Organization

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