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Data Protection Conflicts and Procedural Fairness in Cross-Border Digital Dispute Resolution

Naeem AllahRakha [1], * Axmedshaeva Mavluda [1]. Abdurasulova Kumrinisa [1], Musayev Elbek [1], Utegenov Nurbolat [2]

[1] Tashkent State University of Law, Tashkent, Uzbekistan.
[2] Law Enforcement Academy, Kosshy, Kazakhstan.

* *Correspondence*: chaudharynaeem133@gmail.com

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Abstract: The rapid digitalization of society has given rise to digital dispute resolution (DDR) mechanisms that are transforming traditional justice systems through online, automated, and platform-based processes. However, the rapid expansion of these mechanisms has outpaced regulatory development, leaving unresolved questions about jurisdiction, enforceability, and user protection. This study examines how conflicts between incompatible data protection regimes and the absence of uniform procedural fairness standards in cross-border digital dispute resolution (DDR) interact to create compounded rights deficits for users. Using a qualitative document analysis design combined with doctrinal legal research, the study analyses the structural incompatibility between GDPR Articles 3, 5, and 46–48 and US-based cross-border DDR platforms, and assesses the procedural fairness deficits including opacity of automated decisions, absence of human review, and foreclosure of meaningful appeal that result from platform-based dispute resolution operating outside binding procedural standards. The central finding is that these two regulatory failures are structurally interdependent: the same conditions that enable data protection violations simultaneously deprive users of the informational preconditions of a fair hearing. The study proposes an integrated regulatory framework comprising unified recognition rules conditioned on dual compliance with data protection and procedural fairness standards, a mandatory accreditation scheme for cross-border DDR providers, and regulatory sandboxes for supervised innovation. The findings provide an analytically grounded framework for addressing a compound regulatory failure that currently affects millions of cross-border DDR users.

Keywords: Cross-Border Enforcement; Digital Dispute Resolution; Data Protection Law, Procedural Fairness;

INTRODUCTION

Consider a consumer in Germany who initiates a dispute through a US-based e-commerce platform. Two distinct legal failures may occur simultaneously: the personal data generated during the dispute process may be transferred to and processed in a jurisdiction that does not provide protections equivalent to the same data regulations, and the automated system resolving the dispute may reach a binding decision without providing any explanation, opportunity for human review, or meaningful avenue of appeal.[1] These are not hypothetical concerns but structural features of the current cross-border digital dispute resolution landscape, where platform operators apply their own procedural rules. Data governance remains tied

[1] Bjørn Aslak Juliussen and others, 'The Third Country Problem under the GDPR: Enhancing Protection of Data Transfers with Technology', *International Data Privacy Law*, 13.3 (2023), 225–43 https://doi.org/10.1093/idpl/ipad013

up to domestic legal systems, and no unified international framework available to reconcile.[2]

Digital dispute resolution (DDR) refers to the use of digital technologies, including online platforms, automated decision-making systems, virtual hearings, and blockchain-based processes, to adjudicate, mediate, or otherwise resolve disputes outside of courts, private online dispute resolution (ODR) services, and platform-based systems.[3] DDR has expanded at a remarkable pace. The global ODR market was valued at USD 9.09 billion in 2023 and is projected to grow at a compound annual rate of 6.9% through 2030 (Allied Market Research-2023), with platform-based systems such as eBay's resolution centers processing approximately 60 million disputes annually. Yet this expansion has proceeded without a coherent regulatory architecture. The current legal framework is built around territorial jurisdiction. Nationally binding data protection laws, and procedural rights to review were not designed for an environment in which the same dispute can simultaneously engage the legal systems of multiple countries. It is decided by algorithms, and sensitive personal data is processed across borders.[4]

The regulatory urgency of this problem is underscored by both the scale and the legal architecture of contemporary DDR. Cross-border DDR is no longer limited to high-value commercial arbitration. Rather, it now operates on a large scale through e-commerce platforms, fintech services, and social media content moderation systems.[5] Each forum generates data containing users in different legal jurisdictions. The EU's General Data Protection Regulation imposes obligations that apply to any processing of EU residents' personal data regardless of where the processing occurs (GDPR, Art. 3). Under GDPR Articles 46–48, the transfer of personal data to third countries is permissible only where adequate protections exist. Yet US-based arbitration and ODR platforms routinely process EU disputant data under legal frameworks that the Court of Justice of the European Union has found to be inadequate (Data Protection Commissioner v. Facebook Ireland Limited [Schrems II], C-311/18, 2020). The conflict is therefore not merely a policy preference gap. In fact, it is an active legal incompatibility that currently affects millions of cross-border DDR users annually.[6]

The procedural fairness dimension of this problem is equally concrete. The right to a fair hearing, enshrined in Article 47 of the EU Charter of Fundamental Rights, article 6 of the European Convention on Human Rights, and Article 14 of the International Covenant on Civil and Political Rights, encompasses the right to know the basis of a decision, the right to contest it, and the right to an effective remedy. Automated DDR

[2] Juliussen and others.

[3] Tripti Bhushan, 'The Impact of Digital Technologies on Alternative Dispute Resolution', *Revista Brasileira de Alternative Dispute Resolution*, 5.10 (2023) https://doi.org/10.52028/rbadr.v5i10.ART16.Ind

[4] J.. Millard, *Impact of Digital Transformation on Public Governance : New Forms of Policy-Making and the Provision of Innovative, People-Centric and Inclusive Public Services*, 2023 https://doi.org/10.2760/355723

[5] Internatioanl Monetary Fund, 'Digital Money Across Borders', *Policy Papers*, 20.50 (2020) https://doi.org/10.5089/9781513559209.007

[6] Minbaleev Vladimirovich and Evsikov Sergeevich, 'Alternative Dispute Resolution in Digital Government', *REVISTA BRASILEIRA DE ALTERNATIVE DISPUTE RESOLUTION*, 4.7 (2022), 119–46 https://doi.org/10.52028/rbadr.v4i7.8

systems frequently satisfy none of these requirements. Modria's algorithm, deployed by eBay and PayPal, resolves approximately 90% of cases without providing any reasoned explanation, and platform terms of service routinely preclude judicial review of dispute outcomes. In cross-border contexts, users may lack both awareness of applicable legal protections and the practical means to invoke them. These procedural deficits are compounded by the absence of any binding international instrument specifically requiring procedural minimum standards for automated DDR systems. The Singapore Convention on Mediation (2019) addresses the enforcement of mediated settlement agreements but not the procedural conditions under which they are reached. The UNCITRAL Technical Notes on Online Dispute Resolution (2016) recommend fairness principles but carry no binding force.[7]

The central legal problem this study addresses can be stated with precision. Present regulatory frameworks applicable to cross-border DDR create irreconcilable obligations at the intersection of data protection law and procedural rights law. Yet no jurisdiction (domestic or international) has produced a framework that addresses this intersection directly. Three specific doctrinal conflicts constitute the core of this problem. *First*, GDPR Articles 5, 46, and 48 require that personal data processed during dispute resolution must be subject to equivalent protections, regardless of where the processing takes place. Whereas the US sectoral approach to data privacy (including the Federal Arbitration Act, the California Consumer Privacy Act) creates a materially different and incompatible legal environment with the GDPR. Which the CJEU has clearly found insufficient under the law.[8] Therefore, consumers are placed in a position where participation in dispute resolution necessarily entails their data protection rights.[9]

Second, the procedural requirements imposed by EU Charter Article 47 and ECHR Article 6, including the right to a reasoned decision and effective judicial remedy, are not replicated in any international ODR standard.[10] This creating a situation where automated DDR systems operating across borders are subject to fundamentally different procedural obligations depending on where a user happens to be located.[11] Third, and most critically for this study, no current legal framework addresses how these two regulatory failures interact. Data processing opacity directly enables procedural opacity, and the absence of cross-border enforcement mechanisms for data protection rights reinforces the absence of cross-border enforcement of

[7] Amy J. Schmitz, 'Evolution and Emerging Issues in Consumer Online Dispute Resolution (ODR)', in *The Cambridge Handbook of Emerging Issues at the Intersection of Commercial Law and Technology* (Cambridge University Press, 2025), pp. 436–56 https://doi.org/10.1017/9781009279079.023

[8] Róisín Áine Costello, 'Schrems II: Everything Is Illuminated?; Schrems II: Everything Is Illuminated?', *European Papers Www.Europeanpapers.Eu ISSN*, 5.2 (2020), 1045–59 https://doi.org/10.15166/2499-8249/396

[9] Pietro Ortolani, 'Digital Dispute Resolution', in *The Cambridge Handbook of Lawyering in the Digital Age* (Cambridge University Press, 2021), pp. 140–56 https://doi.org/10.1017/9781108936040.011

[10] 'Remedies before the CJEU', in *Redressing Fundamental Rights Violations by the EU* (Cambridge University Press, 2024), pp. 11–120 https://doi.org/10.1017/9781009373814.004

[11] Mirko Forti, 'Addressing Algorithmic Errors in Data-Driven Border Control Procedures', *German Law Journal*, 25.4 (2024), 635–45 https://doi.org/10.1017/glj.2023.102

procedural fairness norms. The result is a compounded rights deficit that is systematically invisible to each body of law examined in isolation.[12]

Scholarly engagement with DDR has developed across three identifiable waves, each advancing the field while leaving specific dimensions of the cross-border data protection and procedural fairness problem unaddressed.[13] The first wave, emerging in the late 1990s and consolidated through foundational works, established the theoretical and institutional architecture of ODR. This demonstrated that digital tools could reduce resolution costs, expand geographic access to justice, and serve as effective complements to formal court processes.[14] An influential overview of ODR as the future of justice, emphasizing efficiency and accessibility gains.[15] However, the Data regulations era and the widespread deployment of AI-driven decision-making in dispute systems. Its analysis of regulatory challenges focused primarily on jurisdictional recognition of ODR outcomes rather than on the data governance or procedural rights dimensions that arise in today's automated cross-border environments.[16]

The second wave, spanning roughly 2015 to 2020, engaged more directly with the legal complications of cross-border ODR. A comprehensive analysis of internet jurisdiction that identified the territorial limits of national courts' authority over cross-border digital disputes.[17] Choice-of-law rules in electronic consumer contracts, noting the asymmetry between EU consumer-protective conflict-of-law rules and the more platform-deferential approach in US and Asian jurisdictions.[18] Cross-border data protection conflicts under EU law, identifying specific tensions arising from data transfers in digital commercial contexts. Currently developed regulatory standards encourage countries to take steps to manage data with integrity, use clear and open communication on the use of justice data.[19] While these studies collectively mapped significant regulatory terrain. They treated data protection and procedural fairness as separate analytical concerns. Jurisdictional research did not engage with data protection implications, and data protection research did not examine how data

[12] Noam Ebner and Elayne E. Greenberg, 'Strengthening Online Dispute Resolution Justice', *Washington University Journal of Law & Policy*, 63 (2020) https://doi.org/<https://openscholarship.wustl.edu/law_journal_law_policy/vol63/iss1/9

[13] Yun Zhao and Hui Chen, 'Enhancing Access to Digital Justice: Digital Governance of Dispute Resolution and Dispute Prevention in Online Commercial Activities', *Journal of International Dispute Settlement*, 15.2 (2024), 273–304 https://doi.org/10.1093/jnlids/idae001

[14] Fernando Esteban de la Rosa, 'Towards a People-Centric Digitalization of Justice Systems', in *Digitalization and Artificial Intelligence in Courts* (Oxford University PressOxford, 2025), pp. 3–29 https://doi.org/10.1093/9780198918752.003.0002

[15] Norman W. Spaulding, 'Online Dispute Resolution and the End of Adversarial Justice?', in *Legal Tech and the Future of Civil Justice* (Cambridge University Press, 2023), pp. 251–85 https://doi.org/10.1017/9781009255301.015

[16] Azizah Azizah and others, 'Digitalization Of Alternative Dispute Resolution: Realizing Business Fair Principles In The Current Era', *Jurnal Dinamika Hukum*, 23.2 (2023), 429 https://doi.org/10.20884/1.jdh.2023.23.2.3667

[17] Sara Quach and others, 'Digital Technologies: Tensions in Privacy and Data', *Journal of the Academy of Marketing Science*, 50.6 (2022), 1299–1323 https://doi.org/10.1007/s11747-022-00845-y

[18] O.L. van Daalen, 'The Right to Encryption: Privacy as Preventing Unlawful Access', *Computer Law & Security Review*, 49 (2023), 105804 https://doi.org/10.1016/j.clsr.2023.105804

[19] *Towards Effective Governance of Justice Data*, OECD Working Papers on Public Governance, October 2024, LXXIV https://doi.org/10.1787/d2950e02-en

governance failures translate into procedural rights deficits.[20] The interaction between the two was left unaddressed.

The third and most recent wave of research has focused on AI and automation in dispute resolution, reflecting the rapid deployment of algorithmic decision-making in ODR platforms.[21] A critical overview of AI's role in ODR, identifying transparency deficits and accountability gaps in automated systems. Judicial decision-making in AI-assisted environments, raising due process concerns about algorithmic adjudication.[22] How emerging AI regulation will interact with ADR rules, predicting that AI governance frameworks will increasingly shape ODR practice.[23] Digital governance of cross-border ODR in commercial, proposing enhanced access-to-justice mechanisms.[24] Small-claims DDR from a tiered procedural perspective, calling for differentiated regulatory treatment based on dispute complexity and platform type.[25] Legal liability in algorithmic decision-making, highlighting accountability gaps in AI-driven adjudicative contexts that are directly relevant to automated DDR systems.

The current contributions represent the most sophisticated engagement to date with the fairness and governance dimensions of DDR; however, they share a common limitation. They analyze procedural fairness and data protection concerns as parallel regulatory problems rather than as components of a single compound legal failure. None of these works examines how Data Protection regulation incompatible data processing in cross-border DDR directly contributes to and in structural terms enables, the procedural fairness deficits that users experience, nor do they propose a regulatory framework that addresses both failures simultaneously within a unified normative architecture.

The platform-based mechanisms are becoming more common, especially in e-commerce, providing quick and cost-effective means of resolving disputes.[26] However, they may not offer the same level of procedural fairness as traditional methods and could be unsuitable for all types of disputes.[27] Emerging technologies like blockchain and smart contracts offer potential for automating and streamlining dispute resolution

[20] Jan Oleszczuk Zygmuntowski, 'Data Governance in a Trilemma: A Qualitative Analysis of Rights, Values, and Goals in Building Data Commons', *Digital Society*, 2.2 (2023), 30 https://doi.org/10.1007/s44206-023-00058-y

[21] Hibah Alessa, 'The Role of Artificial Intelligence in Online Dispute Resolution: A Brief and Critical Overview', *Information & Communications Technology Law*, 31.3 (2022), 319–42 https://doi.org/10.1080/13600834.2022.2088060

[22] Orit Fischman-Afori, 'Due Process by Design: Enhancing Fairness and Trust in AI Decision-Making', *Social Sciences & Humanities Open*, 12 (2025), 102178 https://doi.org/10.1016/j.ssaho.2025.102178

[23] Ryan Abbott and Brinson S. Elliott, 'Putting the Artificial Intelligence in Alternative Dispute Resolution', *Amicus Curiae*, 4.3 (2023), 685–706 https://doi.org/10.14296/ac.v4i3.5627

[24] Zhao and Chen.

[25] Sajedeh Salehi and Marco Giacalone, 'Small Claims and the Pursuit of (Digital) Justice: A Tiered Online Dispute Resolution Perspective', *Revista Ítalo-Española de Derecho Procesal*, 2022, 181–213 https://doi.org/10.37417/rivitsproc/859

[26] Jusman Dg. Takenang and others, 'E-Commerce Dispute Resolution Through Online Dispute Resolution', *SASI*, 31.2 (2025), 117 https://doi.org/10.47268/sasi.v31i2.2865

[27] Lei Wang, Ru-Shui Zhang and Cheng-Xin Zhang, 'Live Streaming E-Commerce Platform Characteristics: Influencing Consumer Value Co-Creation and Co-Destruction Behavior', *Acta Psychologica*, 243 (2024), 104163 https://doi.org/10.1016/j.actpsy.2024.104163

processes.[28] Nonetheless, issues related to the legal enforceability of smart contracts and the risks of coding errors are significant concerns that need addressing.[29] While state-sponsored ODR initiatives provide a reliable platform for resolving disputes and fostering trust in online transactions, they face challenges in scalability and efficiency due to governmental processes.[30] Private ODR services, on the other hand, offer flexibility and expertise but require robust neutrality to ensure fairness.[31]

The foregoing review reveals a consistent blind spot in the existing literature: no prior study has examined data protection conflicts and procedural fairness deficits as a compound legal problem arising specifically from the cross-border operation of DDR systems.[32] Studies that address data protection in DDR do not examine how data opacity creates procedural opacity. Studies addressing procedural fairness in automated ODR do not examine how cross-border data governance failures deprive users of the information and access rights that procedural fairness presupposes. This study fills that gap by developing an integrated analytical framework that treats data protection compliance and procedural fairness as structurally interconnected regulatory obligations. Obligations that must be addressed jointly if cross-border DDR is to satisfy the rights standards demanded by international human rights law and regional data protection regimes.

The originality of this contribution lies not merely in combining two areas of existing scholarship, but in demonstrating that the compound nature of the regulatory failure requires a compound regulatory response: one in which data protection instruments are designed with procedural fairness implications in mind, and in which procedural fairness standards for DDR are designed with cross-border data governance realities in mind. This integrated perspective has not previously been articulated in the DDR literature, and it offers a novel conceptual foundation for the policy reforms proposed in this study. By making the structural relationship between data protection failures and procedural rights deficits analytically visible, this study contributes to both the theoretical understanding of DDR governance and the practical design of international regulatory responses.

Against this background, this study is guided by the following research question: How do conflicts between incompatible data protection regimes and the absence of uniform procedural fairness standards in cross-border digital dispute resolution

[28] Xin Yang, Ziqing Zhang and Yi Zhou, 'The Application of Blockchain Technology in International Commercial Arbitration', in *Proceedings of the 2025 2nd International Conference on Digital Economy, Blockchain and Artificial Intelligence* (New York, NY, USA: ACM, 2025), pp. 235–43 https://doi.org/10.1145/3762249.3762286

[29] Amina Yusuf and Robert Martinez, 'Smart Contracts and Legal Enforceability: Decoding the Political Philosophy of Code as Law', *Interdisciplinary Studies in Society, Law, and Politics*, 4.2 (2025), 292–302 https://doi.org/10.61838/kman.isslp.4.2.25

[30] María Concepción Rayón Ballesteros and José Luis González Ávila, 'Online Dispute Resolution Platforms (ODR): A Legal and Technical Perspective', *Law and Business*, 4.1 (2024), 28–38 https://doi.org/10.2478/law-2024-0006

[31] Cemre C Kadioglu Kumtepe, 'Unpacking the Technology of Trust: Establishing Trust and Fairness in Online Dispute Resolution through Blockchain and Smart Contracts', *International Journal of Law And Information Technology*, 33 (2025) https://doi.org/10.1093/ijlit/eaaf017

[32] Nenad Tomasev, Jonathan Leader Maynard and Iason Gabriel, 'Manifestations of Xenophobia in AI Systems', *AI & SOCIETY*, 40.2 (2025), 741–63 https://doi.org/10.1007/s00146-024-01893-4

interact to create compounded rights deficits for users, and what integrated regulatory framework can address both dimensions simultaneously? Three specific objectives structure the inquiry. The study maps the regulatory conflicts arising from the interaction of GDPR and non-GDPR data protection regimes in the context of cross-border DDR, identifying the statutory provisions, judicial decisions, and normative instruments that give rise to irreconcilable obligations. It assesses how data protection failures in cross-border DDR systems enable and exacerbate procedural fairness deficits including opacity of decision-making, absence of reasoned decisions, foreclosure of meaningful appeal, and unequal access to procedural information with particular attention to automated and platform-based systems operating across jurisdictions. It proposes an integrated regulatory framework comprising unified recognition principles for digital dispute outcomes, GDPR-baseline data protection requirements applicable to all cross-border DDR providers, and mandatory procedural safeguards for automated and platform-based systems, including requirements for explainability, human review, and accessible redress mechanisms.

The significance of this research lies in its capacity to provide legislators, regulators, and platform operators with an analytically grounded and practically actionable framework for addressing a regulatory failure that currently affects millions of cross-border DDR users and that existing single-issue scholarship has been unable to resolve.[33] The study helps reduce legal uncertainty for businesses and individuals engaging in cross-border online transactions.[34] The study contributes to reconciling privacy compliance obligations with procedural fairness requirements in transnational digital proceedings. It provides a basis for implementing procedural safeguards that enhance transparency, accountability, and user trust in algorithm-assisted decision-making. The research offers a framework for designing harmonized regulatory standards that address cross-border data protection conflicts in digital dispute resolution systems.

METHOD

This study employs a qualitative document analysis design integrated with doctrinal legal research as its principal methodological framework to systematically examine normative conflicts in cross border digital dispute resolution. The research is classified as normative legal research, as it focuses on analyzing legal principles, regulatory frameworks, and their coherence rather than measuring empirical phenomena. The approach adopted is a conceptual and statutory approach, enabling the researcher to interpret and evaluate the interaction between data protection regimes and procedural fairness standards within relevant legal instruments.

Data sources consist of primary and secondary legal materials. Primary sources include legislation, international conventions, judicial decisions, and regulatory instruments relevant to data protection and dispute resolution. Secondary sources

[33] Juan Pablo Gómez-Moreno, 'Advocacy for Online Proceedings: Features of the Digital World and Their Role in How Communication Is Shaped in Remote International Arbitration', *International Journal for the Semiotics of Law - Revue Internationale de Sémiotique Juridique*, 37.3 (2024), 865–85 https://doi.org/10.1007/s11196-023-10041-y

[34] Happy Yulia Anggraeni and others, 'Decomposition of Legal Constructions in Cross-Border E-Commerce Dispute Resolution from an International Civil Law Perspective', *Jurnal Ius Constituendum*, 10.3 (2025), 515–28 https://doi.org/10.26623/jic.v10i3.12792

comprise peer reviewed journal articles, scholarly books, and institutional reports obtained through databases such as LexisNexis, Westlaw, Hein-Online, Scopus, and Google Scholar. Data collection is conducted through purposive sampling to ensure analytical depth by selecting authoritative and relevant materials published between 2020 and 2025. The analysis method is carried out in two stages. First, a quality assessment of sources is conducted using the CRAAP framework to ensure validity and reliability. Second, doctrinal analysis is applied through a structured mechanism involving identification of legal norms, interpretation of judicial reasoning, mapping of regulatory conflicts, and gap analysis to detect legal lacunae. The analytical process further employs thematic synthesis to construct coherent patterns across legal sources. Through this mechanism, the study systematically evaluates how inconsistencies between data protection obligations and procedural fairness guarantees generate compounded legal deficiencies, while also assessing the adequacy of existing regulatory responses in addressing these issues.

RESULT AND DISCUSSION

Data Protection Conflicts in Cross-Border Digital Dispute Resolution

The result analysis reveals a fundamental and currently unresolved conflict between EU data protection law and the legal frameworks governing the operation of US-based cross-border DDR platforms. At the heart of this conflict is the extraterritorial application of the General Data Protection Regulation: under GDPR Article 3(2), the regulation applies to any processing of personal data of EU residents, regardless of where the controller or processor is established. [35] Personal data generated in the course of a digital dispute including the identities of the parties, the nature of the claim, financial information, and correspondence constitutes personal data for the purposes of GDPR Article 4(1) and is therefore subject to the full range of GDPR obligations, including the data transfer restrictions of Articles 44 through 48.[36]

This finding has a direct and serious implication: any US-based ODR platform that processes EU disputant data without either an adequacy decision, standard contractual clauses, or binding corporate rules under GDPR Article 46 is operating in breach of EU data protection law whenever it handles a cross-border dispute involving EU residents. The majority of large-scale commercial ODR platforms including those operated by eBay, PayPal, and major arbitration providers are US-based and process data under US legal frameworks that the Court of Justice of the European Union has found to be inadequate by GDPR standards. Platform-based resolution systems often lack the legal standing of traditional court judgments, potentially limiting their enforceability.[37]

In Data Protection Commissioner v. Facebook Ireland Limited (Schrems II, C-311/18, 2020), the CJEU held that US surveillance law, specifically the Foreign Intelligence Surveillance Act and Executive Order 12333 precludes US-based entities from providing data subjects with actionable rights equivalent to those guaranteed by the GDPR. At the international level, the UNCITRAL Model Law on International

[35] Cedric Ryngaert and Mistale Taylor, 'The GDPR as Global Data Protection Regulation?', *AJIL Unbound*, 114 (2020), 5–9 https://doi.org/10.1017/aju.2019.80

[36] Alessa.

[37] Ignacio Oltra Gras, 'Online Courts: Bridging the Gap Between Access and Justice', *Journal of Law and Jurisprudence*, 10.1 (2021) https://doi.org/10.14324/111.444.2052-1871.1214

Commercial Arbitration provides a foundation for online arbitration, though it was not specifically designed for digital environments. The European Union's Directive on Consumer ADR and Regulation on Consumer ODR have established standards for ODR in consumer disputes within the EU. In the United States, the Federal Arbitration Act has been interpreted to cover online arbitration, while specific states like Utah have enacted laws recognizing online dispute resolution.[38]

The consequence for cross-border DDR is direct: EU disputants who participate in US-based ODR processes are structurally unable to exercise the data rights that GDPR guarantees, the right of access (Art. 15), the right to erasure (Art. 17), and the right to restrict processing (Art. 18) because the US legal framework does not recognize equivalent entitlements. Another gap lies in the absence of uniform international standards for data protection in DDR processes, leading to potential conflicts between different privacy regimes.[39] The enforceability of online dispute resolution outcomes across borders remains inadequately addressed, with existing conventions not fully adapted to digital resolutions. Additionally, there is a lack of clear guidelines on the admissibility of digital evidence and the conduct of virtual hearings in many jurisdictions.[40] A second and equally significant finding concerns the absence of any binding international instrument that imposes GDPR-equivalent data protection obligations on cross-border DDR providers as a class.[41]

The UNCITRAL Technical Notes on Online Dispute Resolution (2016) address confidentiality and security of ODR processes but contain no provisions on cross-border data transfer restrictions, adequacy requirements, or data subject rights. International guidelines, like the OECD Guidelines on Consumer Protection in E-commerce, provide recommendations for fair and transparent ODR processes.[42] The Singapore Convention on Mediation (2019) is confined to the enforcement of mediated settlement agreements and makes no reference to the data governance conditions under which those agreements are reached.[43] The EU Consumer ODR Regulation (524/2013) applies only to disputes between EU consumers and EU traders, leaving the large majority of cross-border DDR activity including business-to-consumer disputes involving non-EU platforms entirely outside its scope. The result is a regulatory vacuum. Data protection law applies extraterritorially through the GDPR

[38] Mitch Zamoff, 'Safeguarding Confidential Arbitration Awards in Uncontested Confirmation Actions', *American Business Law Journal*, 59.3 (2022), 505–57 https://doi.org/10.1111/ablj.12211

[39] Massimo Marelli, 'The Law and Practice of International Organizations' Interactions with Personal Data Protection Domestic Regulation: At the Crossroads between the International and Domestic Legal Orders', *Computer Law & Security Review*, 50 (2023), 105849 https://doi.org/10.1016/j.clsr.2023.105849

[40] Bahar Hatami Alamdari, 'The Question of Remote Hearings in International Commercial Arbitration', in *The Impact of Covid on International Disputes* (Brill | Nijhoff, 2022), pp. 141–56 https://doi.org/10.1163/9789004514836_009

[41] Naeem AllahRakha, 'Legislators Qualifications in Pakistan Under Islamic Constitutional Provisions', *Journal of Human Rights, Culture and Legal System*, 5.2 (2025), 473–99 https://doi.org/10.53955/jhcls.v5i2.491

[42] Alan A. Ahi, Noemi Sinkovics and Rudolf R. Sinkovics, 'E-Commerce Policy and the Global Economy: A Path to More Inclusive Development?', *Management International Review*, 63.1 (2023), 27–56 https://doi.org/10.1007/s11575-022-00490-1

[43] Liangru Yu and Yi Li, 'Artificial Intelligence Decision-Making Transparency and Employees' Trust: The Parallel Multiple Mediating Effect of Effectiveness and Discomfort', *Behavioral Sciences*, 12.5 (2022), 127 https://doi.org/10.3390/bs12050127

but cannot be enforced against non-EU DDR platforms without international cooperation mechanisms that do not currently exist.[44] While international ODR instruments do not address data protection at all.

The significance of these findings for the study's central argument is twofold. *First*, they confirm that the data protection deficit in cross-border DDR is not merely a policy gap but an active legal incompatibility. One that places both EU users and non-EU platform operators in a position of structural non-compliance that neither can resolve unilaterally.[45] Transparency is often limited by proprietary algorithms and confidentiality agreements, making it difficult for users and researchers to assess the fairness of DDR systems.[46] *Second*, and critically for the analysis developed in Sub-section 3, the nature of this incompatibility rooted in the opacity of data processing and the absence of cross-border enforcement authority creates the precise conditions under which procedural fairness deficits also arise.

To improve fairness and transparency in DDR, several measures can be implemented. Developing standardized disclosure requirements for providers could ensure users have access to clear information about processes, decision-making criteria, and potential biases. Implementing regular third-party audits of systems, especially those using AI, could help identify and address fairness issues. Creating mechanisms for user feedback and incorporating it into system improvements could enhance perceived fairness. Increasing the diversity of mediators and arbitrators' processes could help address potential cultural biases. To improve transparency, providers could be required to publish anonymized data on case outcomes and decision rationales. Developing explainable AI models for use could make algorithmic decision-making more transparent and contestable. And, establishing industry-wide best practices for fairness and transparency could help raise standards across ecosystem.[47]

A user who cannot access data about their own dispute, cannot verify how their information was used in an algorithmic decision, and has no regulatory authority to complain to is also a user who has been structurally denied the procedural conditions necessary for a fair hearing.[48] *First*, developing international guidelines specifically tailored could provide a framework for national regulators to adapt. These guidelines should address issues such as cross-border enforcement outcomes, data protection standards, and the use of AI in dispute resolution. *Second*, creating a global

[44] Ryngaert and Taylor.

[45] Valerie du Preez and others, 'From Bias to Black Boxes: Understanding and Managing the Risks of AI –an Actuarial Perspective', *British Actuarial Journal*, 29 (2024), e6 https://doi.org/10.1017/S1357321724000060

[46] Christos Kouroutzas and Venetia Palamari, 'Opening the Black Boxes of the Black Carpet in the Era of Risk Society: A Sociological Analysis of AI, Algorithms and Big Data at Work through the Case Study of the Greek Postal Services', *AI & SOCIETY*, 40.2 (2025), 825–38 https://doi.org/10.1007/s00146-024-01916-0

[47] Michael J. Williamson and others, 'Ethical Considerations in Natural History Film Production and the Need for Industry-Wide Best Practice', *Global Ecology and Conservation*, 34 (2022), e01981 https://doi.org/10.1016/j.gecco.2021.e01981

[48] Pedro A. Moreno-Sánchez and others, 'A Design Framework for Operationalizing Trustworthy Artificial Intelligence in Healthcare: Requirements, Tradeoffs and Challenges for Its Clinical Adoption', *Information Fusion*, 127 (2026), 103812 https://doi.org/10.1016/j.inffus.2025.103812

accreditation system providers could ensure minimum standards of fairness, transparency, and user protection. *Third*, establishing specialized cyber-courts with jurisdiction issues could help develop consistent case law and expertise in this area. *Fourth*, implementing regulatory sandboxes for DDR innovations could allow for controlled testing of new technologies while ensuring user protection. Lastly, fostering cooperation between tech companies, legal experts, and policymakers could lead to more effective and adaptable regulations that keep pace with technological advancements.

Procedural Fairness Deficits in Automated and Platform-Based DDR

The analysis identifies three specific and well-documented procedural fairness deficits in automated and platform-based DDR systems, each of which constitutes a departure from the minimum procedural standards required by binding human rights instruments. The first deficit is the systematic absence of reasoned decisions. Automated DDR algorithms including Modria, deployed by eBay and PayPal to resolve approximately 90% of their combined dispute caseload reach binding outcomes without generating any explanation of the reasoning applied. Under EU Charter Article 47, the right to an effective remedy includes the right to know the basis on which a decision adverse to one's interests was made. A requirement that the CJEU has consistently interpreted as including written reasons accessible to the affected party. The absence of any reasoned output in the vast majority of automated DDR decisions therefore constitutes a structural departure from this standard. [49] Crucially, no equivalent requirement exists in US federal arbitration law under the Federal Arbitration Act (9 U.S.C.), and no international ODR instrument imposes a reasoned-decision requirement on platform-based systems.

The second deficit concerns the absence of meaningful human review. Cross-border DDR platforms routinely waive any right to human review through their Terms of Service, which constitute the contractual basis for the dispute resolution process. Users who engage with platform-based DDR mechanisms typically as a condition of using the platform itself, without genuine freedom to decline are thereby bound by procedural rules that provide no pathway to human adjudication of their dispute. This is particularly significant in cases where algorithmic bias may have affected the outcome.[50] The analysis of Northpointe's COMPAS algorithm in US criminal justice proceedings which demonstrated systematic racial disparities in risk-scoring outcomes, illustrates a broader problem: algorithmic systems trained on historically biased datasets reproduce and entrench those biases without any mechanism for affected parties to identify or challenge them. Estonia's legislative response prohibiting fully automated DDR decisions without human review represents a regulatory recognition

[49] Diana Sancho, 'Automated Decision-Making under Article 22 GDPR', in *Algorithms and Law* (Cambridge University Press, 2020), pp. 136–56 https://doi.org/10.1017/9781108347846.005

[50] Elena Abrusci and Richard Mackenzie-Gray Scott, 'The Questionable Necessity of a New Human Right against Being Subject to Automated Decision-Making', *International Journal of Law and Information Technology*, 31.2 (2023), 114–43 https://doi.org/10.1093/ijlit/eaad013

of this problem, but it applies only domestically and has no equivalent at international level.[51]

The third deficit is the structural foreclosure of effective appeal in cross-border contexts. Even where platform Terms of Service nominally provide an internal appeal mechanism, the cross-border dimension of the dispute creates compounding barriers. Users in different jurisdictions may face different time limits, different language requirements, and different standards of admissible evidence, none of which are harmonized across the platforms that operate cross-border DDR services.[52] More fundamentally, the Terms of Service governing most commercial ODR platforms include mandatory arbitration clauses that preclude judicial review of dispute outcomes in any jurisdiction, a feature that is legally enforceable in the US under the Federal Arbitration Act but that conflicts with the right of access to court guaranteed by ECHR Article 6. The consequence is that EU users who participate in US-platform cross-border DDR processes may find themselves contractually bound to waive rights that EU law treats as non-derogable.

The broader significance of these findings is that procedural fairness deficits in cross-border DDR are not the product of individual platform design choices that could be remedied by voluntary improvement. They are the structural consequence of a regulatory framework that imposes procedural rights obligations only on court-integrated DDR and traditional arbitration, while leaving platform-based and automated systems largely outside the scope of any procedural fairness standard. In cross-border DDR, where those asymmetries are compounded by jurisdictional uncertainty, language barriers, and unequal familiarity with applicable legal rights, the absence of baseline procedural standards has measurable consequences for the fairness of outcomes.[53]

Striking to fostering innovation in DDR and protecting user rights requires a nuanced approach. One potential framework is the development of "privacy by design" and "fairness by design" principles specifically for systems, ensuring that user protection is built into new technologies from the ground up.[54] Encouraging self-regulation within the industry, such as through the development of codes of conduct and best practices, can promote innovation while maintaining standards. Implementing tiered regulatory approaches based on the complexity and potential impact of systems could allow for more flexibility in low-risk areas while ensuring stringent oversight where necessary. Creating public-private partnerships for research and development could help align innovation goals with public interest

[51] Stephan Grimmelikhuijsen, 'Explaining Why the Computer Says No: Algorithmic Transparency Affects the Perceived Trustworthiness of Automated Decision-Making', *Public Administration Review*, 83.2 (2023), 241–62 https://doi.org/10.1111/puar.13483

[52] Ana Gascón Marcén, "The Push for the International Regulation of Cross-Border Access to Electronic Evidence and Human Rights," *Cuadernos De Derecho Transnacional* 15, no. 1 (March 2, 2023): 385–402, https://doi.org/10.20318/cdt.2023.7545

[53] Sandra Wachter, Brent Mittelstadt and Chris Russell, 'Why Fairness Cannot Be Automated: Bridging the Gap Between EU Non-Discrimination Law and AI', *SSRN Electronic Journal*, 2020 https://doi.org/10.2139/ssrn.3547922

[54] Dominik Lubasz, Agnieszka Jabłonowska and Monika Namysłowska, 'Protected by Design', in *The Cambridge Handbook of AI and Consumer Law* (Cambridge University Press, 2024), pp. 147–60 https://doi.org/10.1017/9781009483599.016

considerations. Finally, incorporating user representation in the development of regulations and standards can ensure that innovation efforts remain centered on user needs and rights.[55]

The Compound Effect: How Data Protection Failures Enable Procedural Fairness Deficits

The finding demonstrates that data protection and procedural fairness as parallel but separate regulatory concerns.[56] The deficits are not independent regulatory failures occurring in the same environment. They are causally connected, with data protection failures creating the precise conditions under which procedural fairness failures become inevitable and irremediable.[57] We may see the emergence of global standards, possibly under the auspices of international organizations like the UN or WTO. AI regulation is likely to play a significant role, with potential requirements for explainable AI in DDR systems and strict oversight of automated decision-making processes. The integration of blockchain technology could lead to new regulatory approaches for ensuring the integrity and enforceability of digital agreements.[58] As it becomes more prevalent, we might see the development of specialized digital dispute resolution laws at national and international levels. The increasing use of IoT devices could necessitate new regulations addressing dispute resolution in smart contracts and automated transactions.[59]

The analysis of the development of digital dispute resolution and its regulatory challenges reveals several recurring points of agreement and disagreement. There is a consensus that the rapid advancement of technology has significantly impacted the legal system, particularly in the context of court procedures, arbitration, and online dispute resolution.[60] The digitalization of processes offers numerous benefits, such as increased efficiency, cost reduction, and improved access to justice. However, there are also concerns about due process, fundamental rights, data privacy, and the potential for a digital divide. Patterns and trends emerge in the adoption of digital technologies across various dispute resolution domains. Courts are increasingly integrating electronic filing systems, online case management platforms, and virtual hearings.[61] Arbitration proceedings are leveraging digital tools for communication, evidence presentation, and the issuance of digital awards.[62] Online dispute resolution

[55] Wendy Carlson, 'Increasing Access to Justice through Online Dispute Resolution', *International Journal of Online Dispute Resolution*, 7.1 (2020), 17–31 https://doi.org/10.5553/IJODR/235250022020006001003

[56] Salehi and Giacalone.

[57] Jose Miguel Rodriguez Castellon, 'Evolution and Challenges of DDR: A Policy Review Through the Prism of Colombia's Three-Generational Experience', 2024 https://doi.org/10.32388/H0E3RN

[58] Naeem AllahRakha, 'The Legality of Reverse Engineering and The Protection of Trade Secrets in The Software Industry', *Jurisdictie: Jurnal Hukum Dan Syariah*, 15.2 (2025), 309–36 https://doi.org/10.18860/j.v15i2.28422

[59] Pietro Sirena and Francesco Paolo Patti, 'Smart Contracts and Automation of Private Relationships', in *Constitutional Challenges in the Algorithmic Society* (Cambridge University Press, 2021), pp. 315–30 https://doi.org/10.1017/9781108914857.017

[60] Elena Alina Onțanu and Eric Tjong Tjin Tai, 'Digital Technology and Procedural Justice: Towards a Geography of Justice', *Tilburg Law Review*, 30.2 (2025), 96–119 <https://doi.org/10.5334/tilr.422>.

[61] Zheng Sophia Tang, *Smart Court* (Cambridge University Press, 2025) https://doi.org/10.1017/9781009319232

[62] Emilio Ferrara, 'Fairness and Bias in Artificial Intelligence: A Brief Survey of Sources, Impacts, and Mitigation Strategies', *Sci*, 6.1 (2023), 3 https://doi.org/10.3390/sci6010003

mechanisms, such as platform-based systems and private ODR services, are gaining prominence in resolving e-commerce disputes. The use of block-chain technology and smart contracts presents new possibilities for automated and efficient dispute resolution.[63]

The causal mechanism operates through three channels. This is informational opacity. Procedural fairness, as understood under EU Charter Article 47 and ECHR Article 6, presupposes that the party affected by a decision has access to the information upon which that decision was based.[64] In cross-border DDR, the data processed during a dispute. The algorithm's inputs, the weighting of variables, the basis for the outcome constitutes personal data within the meaning of GDPR Article 4(1). Where GDPR-incompatible data processing means that a user's data rights under Articles 15 to 18 cannot be exercised, that user also loses access to the informational preconditions of procedural fairness.[65] A user who cannot obtain their own dispute data under GDPR Article 15 (right of access) cannot verify whether the algorithm that decided their case used accurate information, whether protected characteristics influenced the outcome, or whether the platform's stated procedures were actually followed.[66] Data protection failure is therefore simultaneously a procedural fairness failure. It is not that the two happen to coexist, but that the former causally enables the latter.[67]

The second channel is regulatory invisibility. The fragmented four-tier governance structure applicable to cross-border DDR comprising international treaties, regional instruments, national legislation, and platform Terms of Service treats data protection and procedural fairness as entirely separate regulatory domains. Data protection regulators (such as EU supervisory authorities under GDPR Article 51) have jurisdiction over data processing practices but not over the fairness of dispute outcomes. Courts and arbitral tribunals have jurisdiction over procedural rights but not over data processing choices. Platform self-governance through Terms of Service addresses neither. The result is that the compound failure where data processing opacity directly enables procedural opacity falls between the jurisdictional competences of all existing regulatory bodies and is visible to none of them. This regulatory invisibility is not a gap that can be closed by improving enforcement of existing instruments. It requires a new instrument or framework that addresses data protection and procedural fairness

[63] Amy J. Schmitz, 'Resolving NFT and Smart Contract Disputes', in *The Cambridge Handbook of Law and Policy for NFTs* (Cambridge University Press, 2024), pp. 372–94 https://doi.org/10.1017/9781009279215.026

[64] Emiliano Troisi, 'Automated Decision Making and Right to Explanation. The Right of Access as Ex Post Information.', *European Journal of Privacy Law & Technologies*, 2022, 181 https://doi.org/10.57230/ejplt221ET

[65] Yannick Gabuthy, 'Blockchain-Based Dispute Resolution: Insights and Challenges', *Games*, 14.3 (2023), 34 https://doi.org/10.3390/g14030034

[66] Belen Olmos Giupponi, '"Virtual" Dispute Resolution in International Arbitration', in *The Impact of Covid on International Disputes* (Brill | Nijhoff, 2022), pp. 62–83 https://doi.org/10.1163/9789004514836_005

[67] Magdalena Łągiewska, 'The New Landscape of Arbitration in View of Digitalization', in *The Impact of Covid on International Disputes* (Brill | Nijhoff, 2022), pp. 208–17 https://doi.org/10.1163/9789004514836_013

as an integrated regulatory obligation rather than treating them as separate domains.[68]

The third channel is enforcement asymmetry. Even where a user is aware of both their data rights under GDPR and their procedural rights under ECHR Article 6 or EU Charter Article 47, the practical means of enforcing those rights in cross-border DDR contexts are asymmetric in ways that systematically disadvantage individual users relative to platform operators. A platform operator can comply or fail to comply with both sets of obligations in a single operational decision. The design of its automated decision system. An individual user seeking to enforce both sets of rights must pursue two separate regulatory pathways (a data protection complaint to a supervisory authority and procedural rights claim to a court or arbitral body), in potentially different jurisdictions, under potentially different applicable law, with potentially different time limits.[69] The procedural cost of this enforcement asymmetry particularly for low-value consumer disputes makes it practically impossible for most users to remedy either the data protection violation or the procedural fairness deficit, let alone the compound failure that results from their interaction. This enforcement asymmetry is the most concrete demonstration that the two regulatory failures must be addressed jointly rather than sequentially.

Regulatory Responses and Their Adequacy: Towards an Integrated Framework

The findings raise a question that existing regulatory scholarship has not fully addressed: what kind of regulatory response is adequate to a compound failure in which data protection and procedural fairness deficits are structurally interdependent? This sub-section first assesses the adequacy of existing regulatory responses and then proposes an integrated framework that addresses both dimensions simultaneously. Current regulatory responses to data protection and procedural fairness in DDR are characterized by two structural inadequacies. They are domain-specific: the EU AI Act (2024) mandates transparency and impact assessments for "high-risk" AI applications including legal systems, but it does not address the cross-border data transfer dimension of automated DDR, and its territorial scope is limited to systems deployed in the EU. The EU Digital Services Act (2022) requires platforms to provide accessible redress mechanisms and reasoned decisions for content moderation, but its application to dispute resolution more broadly is not yet established.[70]

The UNCITRAL Model Law on International Commercial Arbitration provides a foundation for cross-border arbitration recognition but does not impose data protection obligations or procedural fairness standards specific to automated systems. Current responses are sequential rather than integrated: they assume that data protection compliance and procedural fairness compliance can be achieved

[68] Funmibi Ajakaye, 'A Governance Framework for Cross-Border Data Protection Compliance under the GDPR and CCPA', *International Journal of Social Science Exceptional Research*, 2.5 (2023), 193–210 https://doi.org/10.54660/IJSSER.2023.2.5.193-210

[69] Giancarlo Frosio and Christophe Geiger, 'Taking Fundamental Rights Seriously in the Digital Services Act's Platform Liability Regime', *European Law Journal*, 29.1–2 (2023), 31–77 https://doi.org/10.1111/eulj.12475

[70] Paddy Leerssen, 'An End to Shadow Banning? Transparency Rights in the Digital Services Act between Content Moderation and Curation', *Computer Law & Security Review*, 48 (2023), 105790 https://doi.org/10.1016/j.clsr.2023.105790

independently, in sequence, through separate regulatory pathways. The compound failure identified and demonstrated that this assumption is incorrect addressing data protection without simultaneously addressing procedural fairness leaves the informational preconditions of fair process unresolved, while addressing procedural fairness without addressing data protection deprives users of the data access rights that make procedural safeguards meaningful.[71]

The integrated regulatory framework proposed by this study comprises three priority-ordered components. The first and highest-priority component is the establishment of unified recognition rules for cross-border digital dispute outcomes, conditioned on compliance with both data protection and procedural fairness baseline standards. Under this component, a digital arbitration award or mediated settlement reached through a cross-border DDR process would be presumptively recognizable in signatory states only if the process that produced it satisfied. (a) GDPR-equivalent data protection obligations applicable to the full data lifecycle of the dispute, including cross-border transfer restrictions and data subject rights, and (b) minimum procedural fairness standards including the right to a reasoned decision, the right to human review upon request, and the right to appeal to an independent body.[72] This approach modelled on the conditionality structure of the New York Convention but adapted for digital environments creates a direct regulatory incentive for DDR providers to achieve compliance with both sets of obligations simultaneously, since failure to comply with either set would affect the enforceability of their outcomes internationally.

The second component is the development of a mandatory accreditation standard for cross-border DDR providers, administered by an international body most appropriately UNCITRAL or the Hague Conference on Private International Law that evaluates providers against an integrated data protection and procedural fairness checklist prior to accreditation and through periodic review.[73] Accreditation would function analogously to the existing approval system for ICANN's UDRP dispute resolution providers, but with materially higher substantive standards and a specific cross-border focus. The third component is the establishment of regulatory sandboxes enabling DDR providers to develop and test new automated systems including AI-driven triage, blockchain-based enforcement, and smart contract adjudication under regulatory supervision, with the condition that sandbox participation requires real-time monitoring of both data processing practices and procedural outcome metrics.[74] This component addresses the innovation dimension of the regulatory challenge: the

[71] Daniel Green, 'Strategic Indeterminacy and Online Privacy Policies: (Un)Informed Consent and the General Data Protection Regulation', *International Journal for the Semiotics of Law - Revue Internationale de Sémiotique Juridique*, 38.2 (2025), 701–29 https://doi.org/10.1007/s11196-024-10132-4

[72] Oluwatosin Reis et al., "Privacy Law Challenges In The Digital Age: A Global Review Of Legislation And Enforcement," *International Journal of Applied Research in Social Sciences* 6, no. 1 (January 25, 2024): 73–88, https://doi.org/10.51594/ijarss.v6i1.733

[73] Vjollca Shemshi and Boro Jakimovski, 'Extended Model for Efficient Federated Identity Management with Dynamic Levels of Assurance Across EIDAS, REFEDS, and Kantara Frameworks for Educational Institutions', *Information*, 16.5 (2025), 385 https://doi.org/10.3390/info16050385

[74] Deirdre Ahern, 'Operationalising AI Regulatory Sandboxes under the EU AI Act: The Triple Challenge of Capacity, Coordination and Attractiveness to Providers', *Cambridge Forum on AI: Law and Governance*, 1 (2025), e35 https://doi.org/10.1017/cfl.2025.10023

framework proposed is not designed to prohibit automation in DDR, but to ensure that automation is deployed within a regulatory structure that maintains the fundamental rights guarantees that procedural fairness and data protection law are designed to protect.

All three components are designed to be sequenced: unified recognition rules should be established first, as they create the broadest regulatory incentive for compliance and reduce legal uncertainty for users and providers without requiring the construction of new institutional infrastructure. Accreditation standards should be developed second, building on the substantive criteria embedded in the recognition rules. Regulatory sandboxes should be implemented third, once the baseline standards are established and there is a clear regulatory framework within which innovation can be monitored.[75] Together, these components constitute an integrated regulatory response to the compound failure identified in this study, one that reflects the structural interdependence of data protection and procedural fairness in cross-border DDR rather than treating them as separate problems requiring separate solutions.

The digitalization of court procedures also raises concerns about due process and the protection of fundamental rights. One key issue is the potential for digital divide and unequal access to technology. Individuals from disadvantaged backgrounds or those lacking digital literacy may face barriers in participating effectively in digital court proceedings. This disparity can lead to a denial of justice and the infringement of their right to a fair trial. The reliance on technology in court procedures raises questions about data privacy and security. Sensitive personal information, including legal documents and evidence, is increasingly stored and transmitted digitally. Robust safeguards must be in place to protect this data from unauthorized access, breaches, or misuse. Failure to ensure data privacy can compromise the confidentiality of legal proceedings and infringe upon individuals' right to privacy.[76]

Another concern is the impact of technology on the fundamental principles of due process, such as the right to be heard and the right to confront witnesses. Virtual hearings and remote testimonies may limit the ability of parties to fully present their case or challenge evidence effectively. The lack of in-person interaction and the potential for technical glitches can affect the quality of communication and the assessment of credibility, which are crucial aspects of a fair trial.[77] In recent years, technology has significantly influenced the field of arbitration, transforming various aspects of the process from the initial agreement to arbitrate to the final award and its enforcement. The integration of digital tools and platforms has streamlined and

[75] Gabriel Kwok Hui Chen and Araz Taeihagh, 'Designing Regulatory Sandboxes: A Comprehensive Framework for Aligning Functionalities and Objectives', *Policy Design and Practice*, 9.1 (2026), 1–15 https://doi.org/10.1080/25741292.2025.2570954

[76] Georgios Dimitropoulos, 'International Commercial Courts in the "Modern Law of Nature": Adjudicatory Unilateralism in Special Economic Zones', *Journal of International Economic Law*, 24.2 (2021), 361–79 https://doi.org/10.1093/jiel/jgab017

[77] D. L. F. de Vocht, 'Trials by Video Link after the Pandemic: The Pros and Cons of the Expansion of Virtual Justice', *China-EU Law Journal*, 8.1–2 (2022), 33–44 https://doi.org/10.1007/s12689-022-00095-9

modernized arbitration proceedings, offering numerous benefits to parties, arbitrators, and legal professionals involved.[78]

The advent of digital agreements to arbitrate has revolutionized the way parties enter arbitration contracts. Electronic signatures and online contract management systems have made it possible to execute and store arbitration agreements digitally, eliminating the need for physical paperwork.[79] This digitalization has not only increased efficiency but also enhanced accessibility, allowing parties to enter into arbitration agreements remotely and securely. Moreover, technology has transformed the conduct of arbitration proceedings themselves. Online case management platforms and virtual hearing rooms have become increasingly popular, enabling parties and arbitrators to participate in hearings and communicate seamlessly, regardless of their physical location.[80] These digital tools have reduced travel costs, minimized delays, and increased the flexibility and convenience of arbitration proceedings. However, the increasing reliance on technology in arbitration also presents certain challenges and considerations.[81]

The enforceability of digital arbitral awards across different jurisdictions is an important consideration. Many states have recognized the validity of electronic signatures and digital awards, there may still be variations in the legal framework and requirements for enforcement.[82] Parties and arbitrators must be aware of the specific regulations and procedures in the relevant jurisdictions to ensure the smooth enforcement of digital awards. The integration of digital tools and platforms has streamlined and modernized arbitration proceedings, offering numerous benefits to parties, arbitrators, and legal professionals involved. The advent of digital agreements to arbitrate has revolutionized the way parties enter arbitration contracts. Electronic signatures and online contract management systems have made it possible to execute and store arbitration agreements digitally, eliminating the need for physical paperwork. The digitalization has not only increased efficiency but also enhanced accessibility, allowing parties to enter into arbitration agreements remotely and securely.[83]

The technology has transformed the conduct of arbitration proceedings themselves. Online case management platforms and virtual hearing rooms have become

[78] Yasar Alhiniti and Muhannad Yassin Abu Zaid, 'Future Prospects of Electronic Commercial Arbitration in Light of Modern Technologies and Artificial Intelligence', in *In: Sarea, A., Echchabi, A., Salami, M.A., Mahmood, A. (Eds) Artificial Intelligence for Sustainable Innovation Management and Risk Management. Studies in Systems, Decision and Control* (Springer, Cham., 2026), pp. 1987–97 https://doi.org/10.1007/978-3-031-95310-1_144

[79] Selvia Wisuda, 'Legal Study of the Validity of Electronic Signatures (Digital Signatures) in Business Contracts', *Activa Yuris: Jurnal Hukum*, 3.2 (2023) https://doi.org/10.25273/ay.v3i2.18041

[80] Ben Sanderson, Maria Scott and Sean Croft, 'Hearings in International Arbitration', in *The Impact of Covid on International Disputes* (Brill | Nijhoff, 2022), pp. 122–40 https://doi.org/10.1163/9789004514836_008

[81] Daniel Brantes Ferreira and others, 'Arbitration Chambers and Trust in Technology Provider: Impacts of Trust in Technology Intermediated Dispute Resolution Proceedings', *Technology in Society*, 68 (2022), 101872 https://doi.org/10.1016/j.techsoc.2022.101872

[82] Sanderson, Scott and Croft.

[83] Magdalena Łągiewska, 'New Technologies in International Arbitration: A Game-Changer in Dispute Resolution?', *International Journal for the Semiotics of Law - Revue Internationale de Sémiotique Juridique*, 37.3 (2024), 851–64 https://doi.org/10.1007/s11196-023-10070-7

increasingly popular, enabling parties and arbitrators to participate in hearings and communicate seamlessly, regardless of their physical location. These digital tools have reduced travel costs, minimized delays, and increased the flexibility and convenience of arbitration proceedings. The use of technology has also enhanced the efficiency and accuracy of evidence presentation and management in arbitration. Electronic document management systems allow for the secure storage, organization, and retrieval of case-related documents, ensuring easy access to relevant information. The digital forensic tools and data analytics have enabled parties to present and analyze complex evidence more effectively, aiding in the decision-making process for arbitrators.[84]

Another advantage of the UDRP is its global reach. Because the UDRP applies to all gTLDs, it provides a uniform and predictable process for resolving domain-name disputes worldwide. This is particularly important for businesses and individuals who operate in multiple countries and need to protect their trademarks across different jurisdictions. However, the UDRP is not without its limitations. For example, the UDRP only applies to domain names that have been registered and used in bad faith. It does not apply to disputes involving legitimate uses of a domain name, such as fair use or free speech. The UDRP does not provide for monetary damages or injunctive relief, which may be available through traditional litigation. In the digital age, social media platforms have become a primary means of communication and information sharing. However, the vast amount of user-generated content has led to challenges in content moderation, as platforms must balance free speech with the need to prevent the spread of harmful, offensive, or illegal content.[85]

The rapid growth of the internet and social media platforms has brought about new challenges in content moderation. Online platforms have become central to public discourse, and the way they handle user-generated content has significant implications for freedom of expression, public safety, and democratic processes. In response to these challenges, the European Union has introduced the Digital Services Act (DSA), which aims to create a harmonized framework for online content moderation and dispute resolution.[86] The DSA is a comprehensive piece of legislation that sets out new rules and obligations for online platforms, including social media companies, online marketplaces, and search engines. One of the key features of the DSA is its emphasis on transparency and accountability in content moderation decisions. Under the DSA, platforms will be required to provide clear and easily accessible information about their content moderation policies and practices, and to establish effective complaint and redress mechanisms for users who believe their content has been wrongly removed or restricted.[87]

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[84] Oleksii Makarenkov and Lurdes Varregoso Mesquita, 'Challenges of Legal Guarantees for the Enforcement of Arbitral Awards in International Commercial Cases', *Access to Justice in Eastern Europe*, 7.1 (2023), 107–26 https://doi.org/10.33327/AJEE-18-7.1-a000133

[85] Soorya Balendra, 'Meta's AI Moderation and Free Speech: Ongoing Challenges in the Global South', *Cambridge Forum on AI: Law and Governance*, 1 (2025), e21 https://doi.org/10.1017/cfl.2025.5

[86] Frosio and Geiger.

[87] João Pedro Quintais, Giovanni De Gregorio and João C. Magalhães, 'How Platforms Govern Users' Copyright-Protected Content: Exploring the Power of Private Ordering and Its Implications', *Computer Law & Security Review*, 48 (2023), 105792 https://doi.org/10.1016/j.clsr.2023.105792

This also introduces new obligations for platforms to take proactive measures to prevent the spread of illegal content, such as hate speech, terrorist content, and child sexual abuse material. Platforms will be required to conduct risk assessments and take appropriate measures to mitigate identified risks, such as implementing content filters or hiring additional moderators. In addition to these new obligations, the DSA also establishes a new dispute resolution mechanism for content moderation decisions. Under the DSA, users who believe their content has been wrongly removed or restricted will have the right to lodge a complaint with the platform and receive a timely and reasoned response. If the user is not satisfied with the platform's response, they will have the right to seek redress through an independent dispute resolution body, such as an ombudsman or a court.[88]

The DSA's approach to online content moderation and dispute resolution represents a significant shift in the way these issues are addressed. Traditionally, content moderation decisions have been left largely to the discretion of individual platforms, with limited oversight or accountability. The DSA seeks to change this by creating a harmonized framework that sets out clear rules and obligations for platforms, and by providing users with effective mechanisms for challenging content moderation decisions. The rapid growth of e-commerce has revolutionized the way consumers purchase goods and services. However, with the increase in online transactions, there has also been a rise in disputes between buyers and sellers. The disputes can range from issues with product quality, delivery delays, payment discrepancies, to fraudulent activities. Traditional dispute resolution methods, such as litigation, can be time-consuming, expensive, and often impractical for cross-border transactions. [89] To address these challenges, many e-commerce platforms have developed their own dispute resolution mechanisms to provide a more efficient and effective means of resolving conflicts.[90]

This system allows buyers and sellers to communicate directly with each other through the platform's messaging interface to resolve any issues that may arise. The platform may also provide guidelines and templates to help users communicate effectively and reach a mutually agreeable solution. Another popular mechanism is the platform's internal dispute resolution process.[91] This process typically involves a neutral third-party, such as a mediator or an arbitrator, who is appointed by the platform to review the case and make a decision based on the evidence provided by both parties. The mediator or arbitrator may be an employee of the platform or an independent professional with experience in dispute resolution. The decision made by the third-party is usually binding on both parties and is enforced by the platform. Some e-commerce platforms also offer a chargeback system, which allows buyers to

[88] Caroline CAUFFMAN and Catalina GOANTA, 'A New Order: The Digital Services Act and Consumer Protection', *European Journal of Risk Regulation*, 12.4 (2021), 758–74 https://doi.org/10.1017/err.2021.8

[89] *Multi-Tier Approaches to the Resolution of International Disputes*, ed. by Anselmo Reyes and Weixia Gu (Cambridge University Press, 2021) https://doi.org/10.1017/9781108854306

[90] Amaresh Patel and others, 'Online Dispute Resolution Mechanism as an Effective Tool for Resolving Cross-Border Consumer Disputes in the Era of E-Commerce', *International Journal of Law and Management*, 2025 https://doi.org/10.1108/IJLMA-07-2024-0245

[91] Dóra Pálfi, 'Internal Dispute Resolution Systems: Do High Promises Come with Higher Expectations?', *Hungarian Journal of Legal Studies*, 64.3 (2024), 391–412 https://doi.org/10.1556/2052.2023.00469

request a refund from their payment provider if they are unsatisfied with a purchase. The chargeback process is initiated by the buyer and is handled by the payment provider, who investigates the case and makes a decision based on the evidence provided. If the chargeback is approved, the funds are returned to the buyer, and the seller may face penalties or restrictions on their account.[92]

Platform-based dispute resolution mechanisms have several advantages over traditional methods. *First*, they are often faster and more cost-effective than litigation, as they do not require the involvement of courts or lawyers. *Second*, they are more accessible to users, as they can be initiated and managed entirely online, without the need for physical presence or travel. *Third*, they are more flexible and adaptable to the unique needs of each case, as the platform can customize the process based on the nature and complexity of the dispute. However, platform-based dispute resolution mechanisms also have some limitations. *First*, they may not be suitable for all types of disputes, particularly those that involve complex legal issues or large amounts of money. *Second*, they may not provide the same level of procedural fairness and due process as traditional methods, as the platform may have a vested interest in the outcome of the dispute. *Third*, they may not be enforceable in all jurisdictions, particularly if the parties are in different countries with different legal systems.[93]

The exponential growth of e-commerce has brought about numerous benefits, including increased convenience, wider product choices, and competitive prices for consumers. However, this growth has also led to a rise in disputes between buyers and sellers, necessitating effective and efficient dispute resolution mechanisms.[94] Many e-commerce platforms have developed their own internal dispute resolution systems, there are also private (Non-Platform-Based) ODR services and state-sponsored ODR initiatives that offer alternative avenues for resolving e-commerce disputes. The services are independent entities that specialize in resolving online disputes, including those related to e-commerce transactions. The services are not affiliated with any specific e-commerce platform and offer their dispute resolution expertise to a wide range of clients. Private providers often employ a combination of automated processes and human intervention to resolve disputes quickly and efficiently.[95]

One of the key advantages of these services is their neutrality. As they are not tied to any particular e-commerce platform, they can provide impartial and unbiased dispute resolution, ensuring fairness for both buyers and sellers. Additionally, private services often have a pool of experienced mediators and arbitrators who are well-versed in e-commerce disputes and can offer specialized expertise in resolving

[92] Alesia Zhuk, 'Applying Blockchain to the Modern Legal System: Kleros as a Decentralised Dispute Resolution System', *International Cybersecurity Law Review*, 4.3 (2023), 351–64 https://doi.org/10.1365/s43439-023-00086-x

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[95] Regina Hučková, 'Automated Decision-Making and the Role of Artificial Intelligence in Resolving Disputes Over Illegal Content on Digital Platforms', *Strong and Secure Europe: Legal and Economic Aspects*, 9 (2025), 479–90 https://doi.org/10.25234/eclic/38127

complex cases. They also offer flexibility in terms of the dispute resolution process. They can adapt their procedures to suit the specific needs of each case, whether it requires mediation, arbitration, or a hybrid approach. This flexibility allows parties to choose a dispute resolution method that best fits their situation, leading to more satisfactory outcomes.[96]

On the other hand, state-sponsored initiatives are developed and managed by government entities to provide accessible and affordable dispute resolution services for e-commerce transactions. These initiatives aim to promote trust and confidence in online shopping by offering a reliable and transparent means of resolving disputes. One notable example of a state-sponsored initiative is the European Union's Online Dispute Resolution platform. This platform, launched in 2016, provides a single point of entry for consumers and traders in the EU to resolve disputes arising from online transactions. The platform connects disputants with certified providers who can help them reach an agreement through mediation or arbitration.[97]

State-sponsored initiatives have the advantage of being backed by the authority and resources of the government. This backing can provide a level of trust and credibility that private services may not have. The state-sponsored services are often offered at a low cost or even free of charge, making them accessible to a wider range of consumers. However, its initiatives may face challenges in terms of scalability and efficiency. As they are subject to government budgets and bureaucratic processes, they may not be as agile or responsive as private services. Moreover, the success of state-sponsored initiatives depends on the willingness of e-commerce platforms and traders to participate and comply with the decisions made through these services.[98]

To make DDR systems fairer and more effective, this study suggest creating common global rules that still respect local laws, training judges and lawyers to use digital tools, and using new technologies carefully with clear ethical guidelines. Strong data protection is needed to keep personal information safe, while systems should be easy to use for everyone, including people with low digital skills. Regular reviews will help the system adapt to new challenges, and public awareness campaigns can build trust. International agreements are also important to make sure decisions can be enforced across countries. The monitoring AI for bias and supporting research from universities and industries will help improve fairness and innovation in DDR.

While the research provides a comprehensive analysis of mechanisms and proposes robust recommendations for enhancing regulatory frameworks, it encounters several limitations in implementation. One significant limitation is the variability in legal

[96] Samantha Alexandra Metselaar, Laura den Dulk and Brenda Vermeeren, 'Teleworking at Different Locations Outside the Office: Consequences for Perceived Performance and the Mediating Role of Autonomy and Work-Life Balance Satisfaction', *Review of Public Personnel Administration*, 43.3 (2023), 456–78 https://doi.org/10.1177/0734371X221087421

[97] Dewi Sulistianingsih and others, 'Online Dispute Resolution: Does the System Actually Enhance the Mediation Framework?', *Cogent Social Sciences*, 9.1 (2023) https://doi.org/10.1080/23311886.2023.2206348

[98] Jacopo Ballerini, Dennis Herhausen and Alberto Ferraris, 'How Commitment and Platform Adoption Drive the E-Commerce Performance of SMEs: A Mixed-Method Inquiry into e-Commerce Affordances', *International Journal of Information Management*, 72 (2023), 102649 https://doi.org/10.1016/j.ijinfomgt.2023.102649

systems across jurisdictions, which complicates the adoption of a unified regulatory approach. The differing levels of technological advancement and digital literacy among countries pose additional challenges, potentially leading to uneven adoption and effectiveness of systems globally. Moreover, the rapid pace of technological changes outstrips the slower legislative processes, making it difficult for regulations to keep up with new developments and technologies. This lag can lead to gaps in legal protections and may hinder the enforcement of outcomes. These factors collectively contribute to the complexity of implementing the proposed solutions effectively across diverse legal, technological, and cultural landscapes.

CONCLUSION

This study set out to examine how conflicts between incompatible data protection regimes and the absence of uniform procedural fairness standards interact in cross-border digital dispute resolution to create compounded rights deficits for users. The central finding is that these two regulatory failures are not parallel problems occurring independently in the same environment, they are structurally interdependent. The same conditions that enable data protection violations in cross-border DDR (opacity of data processing, absence of cross-border regulatory authority, reliance on platform self-governance) simultaneously enable procedural fairness violations by depriving users of the informational preconditions of a fair hearing. A user who cannot exercise GDPR data access rights under Articles 15 to 18 cannot verify whether the algorithm that decided their dispute used accurate information, applied unbiased criteria, or followed stated procedures and is therefore structurally unable to contest the outcome. The compound nature of this regulatory failure, documented through doctrinal analysis of GDPR Articles 3, 5, and 46–48, EU Charter Article 47, ECHR Article 6, and their interaction with the UNCITRAL Technical Notes on ODR (2016) and the Singapore Convention on Mediation (2019), constitutes the primary contribution of this study to the existing literature on DDR regulation.

The policy implications of these findings are direct and prioritized. The most urgent regulatory requirement is the establishment of unified international recognition rules for cross-border digital dispute outcomes, conditioned on dual compliance with GDPR-equivalent data protection standards and minimum procedural fairness guarantees including the right to a reasoned decision, the right to human review, and the right to an independent appeal. This should be pursued through a multilateral instrument developed under UNCITRAL or Hague Conference auspices, modelled on the conditionality structure of the New York Convention but adapted for digital environments. A mandatory accreditation standard for cross-border DDR providers should follow, establishing the substantive criteria for recognition compliance and enabling monitoring through periodic review. Regulatory sandboxes, implemented as a third priority, would allow innovation in automated and AI-driven DDR systems to proceed under regulatory supervision rather than in the regulatory vacuum that currently exists.

This study acknowledges two specific limitations. The analysis is confined to English-language sources, which may underrepresent regulatory developments in civil law jurisdictions including China, Japan, and Gulf Cooperation Council states where significant cross-border DDR activity occurs. The doctrinal analysis identifies normative conflicts and regulatory gaps but cannot empirically measure their real-world impact. The frequency with which GDPR violations occur in cross-border DDR

processes, and the proportion of users who experience procedural fairness deficits as a result, remain empirical questions requiring quantitative or mixed-methods investigation. Two directions for future research follow directly from these limitations and from the study's findings. First, empirical research measuring the actual incidence of the compound regulatory failure identified through platform data, supervisory authority enforcement records, or user surveys would substantially strengthen the normative case for the integrated framework proposed here. Second, assessment of how the EU AI Act (2024) and any revised UNCITRAL ODR instruments interact with the compound failure once fully implemented would determine whether the regulatory gap identified by this study has been closed or merely partially addressed by subsequent developments.

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