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# IMPLICATIONS OF DIGITALIZATION AND AI IN THE JUSTICE SYSTEM: A GLANCE AT THE SOCIO-LEGAL ANGLE

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ABSTRACT

This research paper critically explores the digital transformation of justice systems, applying the theoretical frameworks of "Law and Society" and "Legal Realism" to analyze the socio-legal implications of this shift. As digital technologies increasingly permeate the judicial landscape, they bring opportunities and challenges. The "Law and Society" theory, which views law as a social phenomenon shaped by cultural, economic, and political factors, is crucial for understanding how digital tools can redefine accessibility and inclusivity within the legal system. Conversely, "Legal Realism" focuses on the practical outcomes of legal processes, emphasizing the importance of assessing the real-world effectiveness of these digital tools. This paper discusses the potential benefits and significant challenges posed by digital justice systems, such as disparities in technological adoption and the risk of exacerbating existing inequalities. This study highlights the operational efficiencies gained and the barriers encountered by examining digital initiatives across various jurisdictions. It provides a nuanced view of how digitalization can bridge and widen legal access gaps, emphasizing the need for a balanced approach that considers both technological advancements and their socio-legal impacts. This analysis aims to contribute to the discourse on modernizing justice systems in a way that is equitable, effective, and reflective of contemporary societal needs.

## INTRODUCTION

In the midst of a rapidly evolving global landscape, the relentless march of technology stands as a beacon of both transformation and challenge.[1] Worldwide judicial systems are adopting digital technology to make civil and commercial legal processes more effective. Evidence shows that these digital tools increase efficiency, transparency, and access to justice.[2] The success of digital technology in improving judicial systems depends on its strategic use. When used correctly, it can strengthen the rule of law, protect human rights, and make justice systems more efficient.[3] Technology can both support and undermine justice and human rights. It's crucial to understand its benefits and risks to ensure it promotes justice, human rights, and the rule of law. Despite global efforts to digitize judicial systems, challenges in technology, law, culture, and training often slow down progress.[4] In 2020, the pandemic caused many courts to close, disrupting judicial systems. This led to a quick and significant turn to technology to keep justice services running. The crisis sped up the digital upgrade of the justice sector, with governments implementing online applications, digital procedures, and virtual courts. This rapid change renewed calls for global modernization and digitization of justice services.[5] The pandemic highlighted the lack of technology in judicial systems around the world. However, some systems adapted well, depending on their readiness for digital change. In contrast, poorer countries, especially in Africa, suffered more due to their lack of technology, poor communication, and limited internet access.[6] As a result, the justice sector in some countries came to a complete halt.[7] Talking about digitizing the justice sector is pointless without first setting up the needed infrastructure, which is key to digital transformation. Recognizing the need to digitize, especially for handling court files, documents, filing lawsuits, and paying fees, is essential for making progress.[8] The main challenge for the justice sector is achieving smooth cooperation between different judicial bodies within the same area. This goal can't be reached without using integrated e-government services.[9] The use of AI (artificial intelligence) in legal processes has significantly improved the speed and accuracy of legal services.[10] Law firms and legal offices now widely use AI tools, marking a significant trend. However, using these smart tools raises complex issues, including concerns about privacy, bias, accuracy, and ethics.[11] AI's use in criminal cases shows it can quickly process vast amounts of data, making decision-making smoother. This not only makes the legal system more efficient but also cuts down on costs, greatly advancing the move towards automating legal

1 Nicholson, S., & Reynolds, J. (2020). Taking Technology Seriously: Introduction to the Special Issue on New Technologies and Global Environmental Politics. *Global Environmental Politics*, 20, pp. 1-8. <https://doi.org/10.1162/glep_e_00576>. Melnik, A., & Vakulik, K. (2021). The Impact of Technological Change on World Economic Growth. *Scientific opinion: Economics and Management* <https://doi.org/10.32836/2521-666x/2021-75-2>

2 Hilgendorf, E. (2018). Digitization and the Law. Nomos Verlagsgesellschaft mbH & Co. p. 9. <https://doi.org/10.5771/9783845289304>

3 Donoghue, J. (2017). The Rise of Digital Justice: Courtroom Technology, Public Participation and Access to Justice. *The Modern Law Review*, 80(6), pp. 995-1025. <http://www.jstor.org/stable/26647119> (Last accessed: February 21, 2023).

4 Ontanu, E. A. (2023). The Digitalisation of European Union Procedures: A New Impetus Following a Time of Prolonged Crisis. *Law, Technology and Humans*, 5(1), p. 93. <https://search.informit.org/doi/10.3316/informit.138934712918581> (Last accessed: February 24, 2023).

5 The Pew Charitable Trusts. (2021). *How Courts Embraced Technology, Met the Pandemic Challenge, and Revolutionized Their Operations*. The Pew Charitable Trusts <https://www.pewtrusts.org/-/media/assets/2021/12/how-courts-embraced-technology.pdf> (Last accessed: January 12, 2024).

6 Drabo, F. (2021). *The Digitization of Court Processes in African Regional and Subregional Judicial Institutions.* (Doctoral dissertation, Walden University). p. 21.

7 Arewa, O. B. (2021). Disrupting Africa: Technology, Law, and Development. Cambridge University Press. pp. 16-28.

8 European Commission. (2018). The 2018 EU Justice Scoreboard. Publications Office of the European Union <https://data.europa.eu/doi/10.2838/72153> (Last access: February 29, 2024).

9 Zhurkina, O., Filippova, E., & Bochkareva, T. (2021, March). Digitalization of legal proceedings: Global trends. In *1st International Scientific Conference "Legal Regulation of the Digital Economy and Digital Relations: Problems and Prospects of Development"(LARDER 2020),* pp. 119-124. Atlantis Press <https://doi.org/10.2991/aebmr.k.210318.018>.

10 Pirmatov, O. (2021). The Role of Artificial Intelligence in the Digitalization of Civil Cases. *Jurisprudence* <https://doi.org/10.51788/tsul.jurisprudence.1.5./gsus1280>

11 Rouhana, K. (2018). AI for Europe. European Commission <https://ec.europa.eu/futurium/en/node/5136> (Last accessed: 06.07.2024).

decisions digitally.[12] AI and machine learning are greatly improving legal research, making it faster and more accurate. This helps lawyers provide better, quicker services. The shift towards AI in law is changing the field, highlighting the need for lawyers, both new and experienced, to learn about AI tools.[13] Despite the significant attention that digital transformation and artificial intelligence (AI) have received in the context of the justice sector, existing literature predominantly focuses on isolated aspects of this phenomenon.[14] Studies have extensively explored the technological advancements in legal proceedings and the potential of AI to disrupt traditional legal practices.[15] However, there remains a conspicuous gap in comprehensive analyses that bridge the dual impact of digital transformation and AI integration, especially in the wake of the global pandemic which has acted as a catalyst for rapid technological adoption.

This research paper critically examines the digital transformation of justice systems through the dual theoretical lenses of "Law and Society" and "Legal Realism". These theories are instrumental in dissecting the interactions between law, technology, and societal needs, offering a nuanced perspective on the implications of digital tools within legal contexts.

The "Law and Society" theory posits that law is a social phenomenon shaped by various cultural, economic, and political factors. This perspective is crucial for understanding how digital technologies can redefine the accessibility and inclusivity of the legal system, making it imperative to consider the societal contexts in which these technologies are deployed. On the other hand, "Legal Realism" argues that the law is what the law does in practice, emphasizing the real-world outcomes of legal processes. This theory highlights the need to evaluate the practical implications of digital tools in justice delivery, focusing on their effectiveness in actual legal settings rather than theoretical ideals.

These theoretical frameworks are chosen because they allow for a comprehensive analysis of both the potential benefits and the complex challenges digital justice systems pose. They help unpack the dynamic relationship between evolving technologies and established legal practices and how this relationship impacts legal systems' structure and the societal outcomes they produce.

The paper progresses by applying these theories in a detailed examination of digital initiatives across various jurisdictions. It assesses the operational efficiencies gained, the barriers encountered, and the disparities in technological adoption across different socio-economic landscapes. Through a critical analysis, this study also explores how digital justice can bridge and exacerbate legal access gaps, underscoring the dual edge of technological integration in legal systems.

In sum, this introduction sets the stage for a deep dive into the transformative role of digitalization in justice systems, guided by robust socio-legal theories illuminating the complexities and imperatives of adapting to a digital legal era. By integrating these theories into our analysis, the paper aims to provide a balanced view that not only celebrates technological advancements but also critically addresses the socio-legal implications accompanying the digital transformation of justice.

## 1. THE IMPERATIVE ROLE OF DIGITALIZING JUSTICE FOR MODERN LEGAL SYSTEMS

The digital transformation of justice systems is not merely a technological upgrade but a profound socio-legal evolution that intersects signifi-

12 Plakhotnik, O. (2019). Practical Use Artificial Intelligence in Criminal Proceeding. *Herald of criminal justice*, (4), pp. 45-57. <https://doi.org/10.17721/2413-5372.2019.4/45-57>

13 Sil, R., Roy, A., Bhushan, B., & Mazumdar, A. (2019). Artificial Intelligence and Machine Learning based Legal Application: The State-of-the-Art and Future Research Trends. *2019 International Conference on Computing, Communication, and Intelligent Systems (ICCCIS)*, pp. 57-62. <https://doi.org/10.1109/ICCCIS48478.2019.8974479>

14 Hongdao, Q., Bibi, S., Khan, A., Ardito, L., & Khaskheli, M. B. (2019). Legal Technologies in Action: The Future of the Legal Market in Light of Disruptive Innovations. *Sustainability*, *11*(4), 1015. <https://doi.org/10.3390/SU11041015>; Contini, F. (2020). Artificial Intelligence and the Transformation of Humans, Law and Technology Interactions in Judicial Proceedings. *Law, Tech. & Hum.*, *2*, p. 4. <https://doi.org/10.5204/lthj.v2i1.1478>

15 Denvir, C., Fletcher, T., Hay, J., & Pleasence, P. (2019). The Devil in the Detail: Mitigating the Constitutional & Rule of Law Risks Associated with the Use of Artificial Intelligence in the Legal Domain. *Fla. St. UL Rev.*, *47*, p. 29. <https://doi.org/10.2139/ssrn.3426337>; Schmitz, A. J., & Zeleznikow, J. (2021). Intelligent Legal Tech to Empower Self-represented Litigants. *Colum. Sci. & Tech. L. Rev.*, *23*, p. 142. <https://doi.org/10.2139/ssrn.4048335>

cantly with the "Law and Society" and "Legal Realism" theories.[16] These frameworks emphasize the dynamic interaction between law, technology, and society, advocating for a legal system that reflects societal needs and realities.

## 1.1 Law and Society Perspective

From the "Law and Society" perspective, digitalizing justice serves more than operational efficiency; it redefines the accessibility and inclusivity of the legal system.[17] By integrating digital tools strategically, there is a potential to enhance the rule of law and safeguard human rights comprehensively. For instance, online submissions of legal requests and court filings, as well as the digitization of evidence and case records, promote transparency and accountability.[18] These measures ensure that the justice system is not only efficient but also equitable, reducing procedural delays that often disproportionately affect marginalized communities. The global shift toward digital platforms during the COVID-19 pandemic underscored the critical role of technology in maintaining the continuity of judicial processes, highlighting a shift from traditional in-person engagements to more inclusive digital interactions that could potentially democratize access to justice.[19]

## 1.2 Legal Realism Application

Incorporating "Legal Realism," this section examines the practical implications of digital tools in judicial processes. Legal Realists argue that the law is what the law does hence evaluating the effectiveness of digital transformation involves looking at its real-world impact on justice delivery.[20] For example, the introduction of video conferencing and electronic filing in various jurisdictions during the pandemic, not only continued but arguably improved the functioning of courts by making them more accessible to the public and enhancing participation rates.[21] The adoption of these technologies, however, presents a dual-edged sword; while it benefits those with legal representation, it may increase the complexity of legal proceedings for pro se litigants.[22] Thus, while digital tools have the potential to streamline processes and reduce case backlogs, they also necessitate critical considerations regarding equal access and the potential for digital divides within the legal system.[23]

## 1.3 Critical Analysis of Socio-Legal Implications

Despite the advancements and positive outcomes observed in Denmark, Portugal, Slovenia, Belgium, Greece, and certain U.S. states, a critical socio-legal analysis reveals varying levels of readiness and adaptation across global jurisdictions.[24] This disparity often reflects underlying socio-economic factors and the availability of technological infrastructure, which can either facilitate or hinder the equitable application of justice.[25] Therefore, while digital transformation offers significant benefits, it also requires a nuanced understanding of

16 Tikhomirov, Y., Kichigin, N., Tsomartova, F., & Balkhayeva, S. (2021). Law and Digital Transformation. *Legal Issues Digit. Age*, *2*, p. 3. <https://doi.org/10.17323/2713-2749.2021.2.3.20>

17 Donoghue, J. (2017). pp. 995-1025.

18 Allard, T., Béziaud, L., & Gambs, S. (2020). Online Publication of Court Records: Circumventing the Privacy-transparency Trade-off. *arXiv preprint arXiv:2007.01688*.

19 Sourdin, T., Li, B., & McNamara, D. (2020). Court Innovations and Access to Justice in Times of Crisis. *Health Policy and Technology*, 9, pp. 447-453. <https://doi.org/10.1016/j.hlpt.2020.08.020>

20 Bochkov, A. (2021). The Intellectual Nature of Law in the Context of Digital Transformation of Society. *Legal Concept* <https://doi.org/10.15688/lc.jvolsu.2021.2.18>

21 Fekete, G. (2021). Videoconference Hearings after the Times of Pandemic. *EU and comparative law issues and challenges series (ECLIC)*, *5*, pp. 468-486 <https://doi.org/10.25234/eclic/18316>

22 Kroeper, K. M., Quintanilla, V. D., Frisby, M., Yel, N., Applegate, A. G., Sherman, S. J., & Murphy, M. C. (2020). Underestimating the Unrepresented: Cognitive Biases Disadvantage Pro Se Litigants in Family Law Cases. *Psychology, Public Policy, and Law*, *26*(2), p. 198. <https://doi.org/10.1037/law0000229>

23 Ramirez, F. (2022). The Digital Divide in the US Criminal Justice System. New Media & Society, 24, pp. 514-529 <https://doi.org/10.1177/14614448211063190>

24 Eurojust. (2021). *The Impact of COVID-19 on Judicial Cooperation in Criminal Matters: Analysis of Eurojust's Casework*. Eurojust <https://doi.org/10.2812/083631>

25 Weber, G. F. (2018). Challenges to Societal Progress-Pullback in Response to Disparities. *Int'l J. Soc. Sci. Stud.*, *6*, p. 86. <https://doi.org/10.11114/IJSSS.V6I5.3091>

its implications on different populations, especially in regions with limited internet connectivity.[26]

## 1.4 Future Directions and Theoretical Integration

Looking forward, the integration of digital tools into justice systems should be guided by socio-legal theories that advocate for a more humane and socially responsive legal system.[27] This involves not only deploying technology to expedite procedures but also ensuring that such technologies are accessible and beneficial to all segments of society. The United Nations Development Programme (UNDP) has recognized the potential of technology to safeguard rights and prevent violations, signaling an international move towards embracing digital justice as a strategy to enhance legal systems worldwide.[28]

# 2. THE ROLE OF LEGISLATIVE SUPPORT IN FACILITATING THE DIGITALIZATION OF JUSTICE

## 2.1 Integration of Sociological Jurisprudence

### *2.1.1 Legislative Frameworks and Social Dynamics*

The advancement of justice systems through digital transformation requires an inclusive approach in legislative policymaking that actively incorporates considerations for privacy, cybersecurity, and access to justice for all.[29] This necessitates an understanding of how digital tools intersect with various social characteristics, including class, race, and gender.[30] For instance, the UNCITRAL's Model Law on Electronic Commerce establishes a legal foundation but must also ensure these systems are accessible to those with limited digital literacy, thereby preventing new forms of social and digital divide.[31]

### *2.1.2 Addressing Global Disparities*

Legislation supporting digital justice must not only standardize procedures but also tailor these to the specific socio-economic contexts of different regions.[32] For example, the disparities in digital infrastructure between countries in the European Union highlight the need for policies that not only promote digitalization but also bridge the digital divide.[33] The integration of digital tools should be accompanied by measures that ensure all members of society can benefit from them equally, without exacerbating existing inequalities.[34]

## 2.2 Application of Legal Realism

### *2.2.1 'Law in Action' in Digital Justice*

Legal Realism pushes us to examine the practical implementation of digital justice reforms.[35] It highlights the divergence between the theoret-

26 Gallardo, R. (2019). Bringing Communities into the Digital Age. *State and Local Government Review*, 51, pp. 233-241 <https://doi.org/10.1177/0160323X20926696>

27 Przhilenskiy, V. I. (2020). Social Technologies and Principles of Criminal Justice in the Context of its Digitalization. *Lex Russica*, *73*(4), pp. 84-92 <https://doi.org/10.17803/17295920.2020.161.4.084-092>

28 Guterres, A. (2020*). The Highest Aspiration: A Call to Action for Human Rights*. United Nations, p. 11 <https://www.un.org/sg/sites/www.un.org.sg/files/atoms/files/The_Highest_Asperation_A_Call_To_Action_For_Human_Right_English.pdf> (Last accessed: February 12, 2023).

29 Mokofe, W. M. (2023). Digital Transformations of the South African Legal Landscape. *Journal of Digital Technologies and Law*, *1*(4), pp. 1087-1104 <https://doi.org/10.21202/jdtl.2023.47>

30 Holvino, E. (2008). Intersections: The Simultaneity of Race, Gender and Class in Organization Studies. Gender, Work and Organization, 17, pp. 248-277 <https://doi.org/10.1111/J.1468-0432.2008.00400.X>

31 United Nations Commission on International Trade Law (UNCITRAL). (1996). UNCITRAL Model Law on Electronic Commerce with Guide to Enactment 1996 with Additional Article 5 bis as Adopted in 1998. United Nations <https://uncitral.un.org/en/texts/ecommerce/modellaw/electronic_commerce> (Last accessed: 06.07.2024).

32 Thinyane, M. (2020). Standardizing Social Justice in Digital Health: An HDI-Informed Health Informatics Architecture. *International Journal of Standardization Research (IJSR)*, *18*(1), pp. 24-43 <https://doi.org/10.4018/ijsr.20200101.oa2>

33 Cruz-Jesus, F., Oliveira, T., & Bacao, F. (2012). Digital Divide Across the European Union. *Information & Management*, *49*(6), pp. 278-291 <https://doi.org/10.1016/j.im.2012.09.003>

34 Heeks, R. (2022). Digital Inequality beyond the Digital Divide: Conceptualizing Adverse Digital Incorporation in the Global South. *Information Technology for Development*, 28, pp. 688-704 <https://doi.org/10.1080/02681102.2022.2068492>

35 Donoghue, J., pp. 995-1025.

ical goals of legislation and their real-world execution.[36] For instance, despite the existence of comprehensive frameworks like the Hague Conventions for cross-border judicial processes, the actual effectiveness of these laws in practice can be limited by local resistance to digital methods, particularly from legal professionals who prioritize traditional, face-to-face interactions.[37]

### *2.2.2 Practical Barriers and Resistance*

The slow pace of digital transformation in places like the European Union can be attributed to practical barriers, including significant costs and diverse levels of infrastructure readiness. Furthermore, resistance from legal professionals who are sceptical of replacing personal interactions with digital processes underscores the need for legislative bodies to not only pass laws but also manage change effectively within the legal community.[38]

## 2.3 Detailed Analysis of Regional Efforts

### *2.3.1 Asia-Pacific Initiatives*

In the Asia-Pacific region, the Asia-Pacific Economic Cooperation (APEC) has undertaken initiatives to improve the legal landscape for electronic commerce and tackle issues like electronic authentication and data protection.[39] In a similar manner, the ASEAN Agreement, ratified by the Association of Southeast Asian Nations (ASEAN), establishes a legal framework aimed at improving electronic transactions and facilitating cross-border e-commerce. As per Article 7 of this agreement, every member state is required to broaden the adoption of electronic versions of trade administration documents and streamline the exchange of electronic documents utilizing information and communication technology. This is to be done in alignment with the stipulations outlined in the ASEAN Customs Agreement signed on March 30, 2012, in Phnom Penh, Cambodia, as well as other relevant international agreements.[40]

### *2.3.2 African Union's Digital Legal Framework*

Africa's focus on aligning legal frameworks with digital advancements reflects a forward-thinking approach but also presents challenges in ensuring these frameworks can keep pace with rapid technological changes. Policymakers must remain flexible and responsive to both local needs and global digital trends to prevent legal obsolescence.[41]

### *2.3.3 Variability in the GCC*

The contrast between the UAE's progressive digital laws and Bahrain's more conservative stance highlights the variability in legislative adaptation within the GCC.[42] This region shows how cultural values and legal traditions significantly influence the acceptance and implementation of digital justice systems.

### *2.3.4 Ensuring Equitable Access*

Ensuring that digital transformation in the justice sector is inclusive and equitable is a recurring theme across all regions.[43] Legislative efforts need to focus

36 Dagan, H. (2012). Lawmaking for Legal Realists. *The Theory and Practice of Legislation*, 1, pp. 187-204 <https://doi.org/10.5235/2050-8840.1.1.187>

37 Khatri, B. (2016). The Effectiveness of the Hague Convention on Choice of Court Agreements in Making International Commercial Cross-border Litigation Easier – A Critical Analysis. *Victoria University of Wellington Legal Research Paper, Student/Alumni Paper*, (48).

38 Skabelina, L. (2022). Psychological Reasons for the Resistance of Attorneys to the Introduction of Digitalization. Advocate's practice <https://doi.org/10.18572/1999-4826-2022-1-55-57>

39 APEC. (2020). *Regulations, Policies and Initiatives on E-Commerce and Digital Economy for APEC MSMEs' Participation in the Region. (n.d.). APEC* <https://www.apec.org/Publications/2020/03/Regulations-Policies-and-Initiatives-on-E-Commerce-and-Digital-Economy> (Last accessed: 06.07.2024).

40 ASEAN Agreement on Electronic Commerce. (2019). *Article 7*.

41 African Union. (2020). The Digital Transformation Strategy for Africa (2020-2030). Addis Ababa: African Union> <https://au.int/sites/default/files/documents/38507-doc-dts-english.pdf> (Last accessed January 20, 2024).

42 Ali, F., & Al-Junaid, H. (2019). Literature Review for Videoconferencing in court "E-Justice-Kingdom of Bahrain". *2nd Smart Cities Symposium (SCS 2019)*, p. 8 <https://doi.org/10.1049/cp.2019.0181>; Federal Decree No. 10 of 2017. (2017). *Amending the Civil Procedures Law, issued by Federal Law Number 11 of 1992*.

43 Sari, E., Ghazali, M., Tedjasaputra, A., Kurniawan, Y., Chintakovid, T., Nuchitprasitchai, S., Zulaikha, E., Norowi, N., & Makany, T. (2022). SEACHI 2022 Symposium: Bringing Equality, Justice, and Access to HCI and UX Agenda in

on creating frameworks that not only support technological advancements but also promote fairness, privacy, and access to justice for all, especially the underrepresented and disadvantaged groups.

## 3. HURDLES OF DIGITALIZATION IN THE JUSTICE SECTOR: A SOCIO-LEGAL PERSPECTIVE

Digital transformation within the justice sector heralds a potential paradigm shift in how justice is administered[44]. However, this transformation is riddled with significant hurdles that go beyond the integration of new technologies, touching deeply on socio-legal realities.[45] Employing the "Law and Society" and "Legal Realism" perspectives, this analysis seeks to critically examine these challenges, underlining the complex interplay between technological advances and entrenched legal and societal structures.[46]

### 3.1 Technological Infrastructure Weakness

1. Law and Society Analysis:

The provision of adequate technological infrastructure, crucial for digital transformation, mirrors underlying socio-economic inequalities.[47] In the United States, discrepancies in access to high-speed Internet and advanced computing technology often align with socio-economic status, disproportionately affecting those with disabilities or limited English proficiency.[48] This reflects a broader issue of digital equity that must be addressed within the framework of societal readiness for technological adoption.

In developing regions, such as Africa and Asia, disparities are more pronounced.[49] For instance, Kenya's internet penetration rate stands at 87.2%,[50] starkly contrasting with South Sudan's 7%.[51] Most countries in these regions have internet access rates below 50%,[52] underscoring the urgent need for a socio-legal approach that considers economic and technological disparities in the digital transformation efforts.

2. Legal Realism Considerations:

The practical effects of inadequate technological infrastructure on justice delivery are significant. In conflict-affected areas like Sudan, not only do physical infrastructures suffer, but intentional disruptions to internet and communication services further impair judicial functions.[53] For example, the ongoing conflict in Sudan involving the Sudanese army and the Rapid Support Forces has highlighted the extreme weakness of the technological and communication infrastructure, rendering it incapable of offering alternative solutions in such dire circumstances.[54] In war-affected regions

Southeast Asia Region. *CHI Conference on Human Factors in Computing Systems Extended Abstracts.* pp. 1-5 <https://doi.org/10.1145/3491101.3504031>

44 Maslennikova, L. N. (2019). Transformation of Pre-trial Proceedings in the Initial Stage of Criminal Proceedings, Ensuring Access to Justice in the Industry 4.0 Era. *Actual problems of Russian law*, (6), pp. 137-146 <https://doi.org/10.17803/1994-1471.2019.103.6.137-146>

45 Kirsiene, J., Amilevicius, D., & Stankevičiūtė, D. (2022). Digital Transformation of Legal Services and Access to Justice: Challenges and Possibilities. Baltic Journal of Law & Politics, 15, pp. 141-172 <https://doi.org/10.2478/bjlp-2022-0007>.

46 Bochkov, A. (2021).

47 Robinson, L., Schulz, J., Blank, G., Ragnedda, M., Ono, H., Hogan, B., Mesch, G., Cotten, S., Kretchmer, S., Hale, T., Yan, P., Wellman, B., Harper, M., Quan-Haase, A., Dunn, H., Casilli, A., Tubaro, P., Carveth, R., Chen, W., Wiest, J., Dodel, M., Stern, M., Ball, C., Huang, K., Khilnani, A., & Drabowicz, T. (2020). Digital inequalities 2.0: Legacy Inequalities in the Information Age. *First Monday*, 25(7) <https://doi.org/10.5210/fm.v25i7.10842>

48 Dobransky, K., & Hargittai, E. (2006). The Disability Divide in Internet Access and Use. *Information, Communication & Society*, 9, pp. 313-334 <https://doi.org/10.1080/13691180600751298>; Shi, L., Lebrun, L., & Tsai, J. (2009). The Influence of English Proficiency on Access to Care. *Ethnicity & Health*, 14, pp. 625-642 <https://doi.org/10.1080/13557850903248639>

49 Petrazzini, B., & Kibati, M. (1999). The Internet in Developing Countries. Communications of the ACM, 42, pp. 31-36 <https://doi.org/10.1145/303849.303858>

50 Mbata, P. A. (2022). *Effects of Internet Connectivity on Economic Growth in Kenya* (Doctoral dissertation, University of Nairobi).

51 Kemp, S. (2023). *Digital 2023: South Sudan*. Datareportal <https://datareportal.com/reports/digital-2023-south-sudan> (Last accessed: March 6, 2023).

52 Ismail, H. G. I. (2020). The Need to Re-examine the Route of Pre-emption Law in Sudan: A Critical Analysis. *Arab Law Quarterly*, 36(3), pp. 324-350 <https://doi.org/10.1163/15730255-BJA10063>

53 Siddig, A., & Ellison, A. (2022). How is the Coup Impacting Science and Scientists in Sudan?. *AfricArXiv Preprints* <https://doi.org/10.31730/osf.io/u2p7h>

54 Nashwan, A. J., Osman, S. H., & Mohamedahmed, L. A. (2023). Violence in Sudan: A Looming Public Health

like Khartoum State and Darfur States, the courts have ceased to operate, resulting in a complete paralysis of the judicial system.[55] At certain times, internet and communication services were intentionally disrupted. For example, MTN, a telecommunications company, suspended its services for approximately 10 hours on April 16th.[56] Additionally, Sudanese telecom company Sudatel halted operations starting Sunday, April 23rd.[57] However, according to statistics from World Internet Stats, the global internet access rate surpasses 67%.[58]

## 3.2 Resistance to Change

1. Cultural and Organizational Barriers:

Resistance to digital transformation in the justice sector often stems from deep-rooted socio-legal issues such as fears of job displacement, entrenched traditionalism in judicial practices, and a general lack of technological literacy among judicial personnel.[59] This resistance reflects broader cultural and organizational challenges that need strategic intervention.[60]

For instance, despite technological advancements, Spain and Italy have experienced significant resistance to digitalization in the justice sector.[61] This resistance is indicative of broader organizational and cultural misalignments that can impede effective digital transformation.[62]

2. Strategic Solutions:

Addressing these challenges extends beyond technological implementation to include comprehensive socio-legal strategies that embrace training, stakeholder engagement, and policy reform.[63] Cultivating a supportive culture for technological adaptation requires changing mindsets as much as changing laws, ensuring that technological and legal reforms align with the societal contexts and expectations of the judicial community.[64]

Integrating "Law and Society" and "Legal Realism" into the analysis of digital transformation in the justice sector provides a richer understanding of the challenges faced. This approach highlights the necessity of viewing these transformations through a socio-legal lens, ensuring that technological upgrades in the justice sector are not only about efficiency but are also socially equitable and legally grounded.

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## 4. DIGITALIZING JUSTICE IN THE ERA OF AI

The integration of artificial intelligence (AI) into the justice sector marks a profound shift in the landscape of legal services.[65] Initially met with scepticism, the role of AI in the justice sector has evolved from a theoretical concept to a practical reality, challenging traditional perceptions of the legal profession's immunity to technological disruption.[66] This transformation invites a thorough examination through the lenses of "Law and Society" and "Legal Realism" to understand the broader implications of AI on legal systems and societal norms.[67]

### 4.1 AI's Role in Legal Decision-Making

#### *4.1.1 Law and Society Perspective*

AI technologies, such as rule-based systems and machine learning, are not just tools for efficiency but also agents of change in the legal landscape.[68] These technologies interact with legal norms and practices in ways that can redefine the access to and delivery of justice.[69] For instance, AI's ability to analyze large volumes of legal texts and precedents can democratize legal knowledge, potentially leveling the playing field for those who cannot afford traditional legal services.[70] However, this also raises questions about the standardization of legal interpretations and the potential for a 'one-size-fits-all' approach in complex legal scenarios.[71]

#### *4.1.2 Legal Realism Considerations*

From the standpoint of Legal Realism, the practical impact of AI on the justice sector is profound.[72] While AI can assist in decision-making processes, its application must be scrutinized for accuracy, fairness, and transparency.[73] The belief that AI could replace human judges is controversial and merits critical evaluation.[74] The technology's current usage in anti-money laundering and routine legal analyses highlights its utility but also underscores the need for oversight to prevent biases embedded in AI algorithms from perpetuating inequalities in judicial outcomes.[75]

### 4.2 Challenges and Ethical Considerations

#### *4.2.1 AI and Ethical Dilemmas*

The deployment of AI in legal contexts introduces complex ethical dilemmas, particularly

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66 Farayola, M. M., Tal, I., Malika, B., Saber, T., & Connolly, R. (2023, August). Fairness of AI in Predicting the Risk of Recidivism: Review and Phase Mapping of AI Fairness Techniques. In *Proceedings of the 18th International Conference on Availability, Reliability and Security,* pp. 1-10 <https://doi.org/10.1145/3600160.3605033>

67 Surden, H. (2020). Ethics of AI in law: Basic questions. In D. Dubber, F. Pasquale, & S. Das (Eds.), The Oxford handbook of Ethics of AI. pp. 719-736. Oxford University Press <https://doi.org/10.1093/oxfordhb/9780190067397.013.46>

68 Laukyte, M. (2019, June). AI as a Legal Person. In *Proceedings of the Seventeenth International Conference on Artificial Intelligence and Law,* pp. 209-213 <https://doi.org/10.1145/3322640.3326701>

69 Papysheva, E. S. (2022). Artificial Intelligence and Criminal Justice Principles: Compatibility Issues. *Gaps in Russian Legislation*, *15*(5), pp. 430-436 <https://doi.org/10.33693/2072-3164-2022-15-5-430-436>

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73 Angerschmid, A., Zhou, J., Theuermann, K., Chen, F., & Holzinger, A. (2022). Fairness and Explanation in AI-informed Decision Making. *Machine Learning and Knowledge Extraction*, *4*(2), pp. 556-579 <https://doi.org/10.3390/make4020026>

74 Ulenaers, J. (2020). The Impact of Artificial Intelligence on the Right to a Fair Trial: Towards a Robot Judge? *Asian Journal of Law and Economics*, *11*(2) <https://doi.org/10.1515/ajle-2020-0008>

75 Day, M. Y. (2021, November). Artificial Intelligence for Knowledge Graphs of Cryptocurrency Anti-money Laundering in Fintech. In *Proceedings of the 2021 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining,* pp. 439-446 <https://doi.org/10.1145/3487351.3488415>

concerning privacy, data protection, and the risk of algorithmic bias.[76] These issues necessitate a socio-legal framework that considers the implications of AI beyond mere efficiency, focusing on ethical governance and the protection of fundamental rights.[77]

### *4.2.2 Socio-Legal Impact of AI*

As AI technologies become more embedded in legal practices, their influence extends to shaping the very structure of legal reasoning and outcomes.[78] This shift requires a critical analysis of how AI impacts legal equity and justice delivery, especially in cases involving vulnerable populations who may be disproportionately affected by automated decision-making processes.[79]

The advent of AI in the justice sector represents a significant milestone in the digitization of legal services, transcending traditional assistance tools to initiate a broader transformation across various legal domains.[80] By adopting a socio-legal perspective, this analysis highlights the need to balance innovation with accountability, ensuring that AI's integration into the justice system enhances rather than undermines the principles of fairness and justice.[81] The critical examination through "Law and Society" and "Legal Realism" offers valuable insights into the evolving relationship between technology and law, emphasizing the importance of developing robust legal frameworks that govern the use of AI in ways that are both ethical and effective.[82]

## 5. THE DAWN OF AI IN LAW FIRMS

The integration of artificial intelligence (AI) into law firms represents a significant stride in the ongoing digitization of the justice sector.[83] This evolution is particularly pronounced within the distinct regulatory and operational environments of legal entities, which differ markedly from those of the judiciary.[84] Law firms, central to the administration of justice and the protection of individual rights, have now begun to harness AI's potential to transform their practices.[85]

## 5.1 Enhancement of Legal Practices through AI

### *5.1.1 Operational Efficiency*

AI technologies have been integrated into law firms with the primary aim of enhancing productivity and streamlining decision-making processes.[86] Tools such as AI-powered document analysis and contract review systems enable lawyers to process large volumes of information with greater accuracy and less effort.[87] This efficiency gain not only

76 Wang, T., Zhao, J., Yu, H., Liu, J., Yang, X., Ren, X., & Shi, S. (2019, November). Privacy-preserving Crowd-guided AI Decision-making in Ethical Dilemmas. In *Proceedings of the 28th ACM International Conference on Information and Knowledge Management*, pp. 1311-1320 <https://doi.org/10.1145/3357384.3357954>

77 Aizenberg, E., & Van Den Hoven, J. (2020). Designing for Human Rights in AI. *Big Data & Society*, *7*(2), 2053951720949566 <https://doi.org/10.1177/2053951720949566>

78 Eliot, L. (2020).

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85 Armour, J., & Sako, M. (2020). AI-enabled business models in legal services: from traditional law firms to next-generation law companies?. *Journal of Professions and Organization*, *7*(1), pp. 27-46. <https://doi.org/10.1093/jpo/joaa001>

86 *Ibid* 85, pp. 27-46.

87 Yaqin, L., Gang, C., Runkai, Z., & Mengting, S. (2020, August). Design of Contract Review System in Enterprise Legal Department Based on Natural Language Processing. In *2020 15th International Conference on Computer Science & Education (ICCSE)* pp. 331-335. IEEE <https://doi.

boosts firm competitiveness but also allows attorneys to focus more on strategic aspects of their cases rather than mundane tasks.[88]

#### *5.1.2 Economic Impact*

The adoption of AI in law firms also indirectly enhances access to justice.[89] By automating routine tasks, AI tools reduce the time and resources required to handle cases.[90] This efficiency can lead to lower legal fees, making legal services more accessible to a broader segment of the population and potentially increasing the firm's client base.[91]

### 5.2 Socio-Legal Implications of AI in Law Firms

#### *5.2.1 Law and Society Perspective*

From a "Law and Society" viewpoint, the adoption of AI in law firms raises significant questions about the balance between technological advancement and ethical legal practice.[92] While AI can democratize access to legal resources, it also necessitates careful consideration of how these technologies are implemented to ensure they do not compromise the quality of legal representation or exacerbate existing disparities in legal access.[93]

#### *5.2.2 Legal Realism Considerations*

The "Legal Realism" framework prompts a critical examination of how AI tools operate in real-world scenarios.[94] For example, while AI can efficiently analyze legal precedents and documents, there is a need for oversight to ensure that the outcomes of such analyses are fair and unbiased.[95] The practical application of AI must be continuously assessed to avoid perpetuating or creating biases that could influence judicial outcomes.[96]

### 5.3 Challenges and Ethical Considerations

#### *5.3.1 Ethical and Regulatory Challenges*

The integration of AI into legal practice is not without its challenges.[97] Ethical concerns such as data privacy, security, and the potential for algorithmic bias must be rigorously addressed.[98] Law firms must navigate these issues carefully, establishing clear guidelines and protocols to ensure that AI tools are used responsibly and transparently.[99]

#### *5.3.2 Future Outlook and Adaptation*

As AI technology evolves, so too must the regulatory and ethical frameworks that govern its use in legal practices.[100] Continuous education and adaptation are essential for law firms to keep pace

org/10.1109/ICCSE49874.2020.9201618>

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90 Dabass, J., & Dabass, B. S. (2018). Scope of Artificial Intelligence in Law <https://doi.org/10.20944/PREPRINTS201806.0474.V1>

91 Soukupová, J. (2021). AI-based Legal Technology: A Critical Assessment of the Current use of Artificial Intelligence in Legal Practice. *Masaryk University Journal of Law and Technology*, *15*(2), pp. 279-300.

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93 Simshaw, D. (2018). Ethical Issues in Robo-lawyering: The Need for Guidance on Developing and Using Artificial Intelligence in the Practice of law. Hastings LJ, *70*, p. 173.

94 Miles, T. J., & Sunstein, C. R. (2008). The New Legal Realism. *U. Chi. L. Rev.*, *75*, p. 831.

95 Wachter, S., Mittelstadt, B., & Russell, C. (2021). Why Fairness Cannot be Automated: Bridging the Gap between EU Non-discrimination Law and AI. *Computer Law & Security Review*, *41*, 105567 <https://doi.org/10.2139/ssrn.3547922>

96 Landers, R. N., & Behrend, T. S. (2023). Auditing the AI auditors: A Framework for Evaluating Fairness and Bias in High Stakes AI Predictive Models. *American Psychologist*, *78*(1), p. 36 <https://doi.org/10.1037/amp0000972>

97 Ebers, M. (2019). Regulating AI and Robotics: Ethical and Legal Challenges. In M. Ebers & S. N. Navarro (Eds.), Algorithms and Law. Cambridge University Press. (Forthcoming) <https://doi.org/10.2139/ssrn.3392379>

98 Tat, E., & Rabbat, M. (2021). Ethical and Legal Challenges. In Machine Learning in Cardiovascular Medicine, pp. 395-410. Academic Press <https://doi.org/10.1016/B978-0-12-820273-9.00017-8>

99 Simshaw, D. (2018). Ethical Issues in Robo-lawyering: The Need for Guidance on Developing and Using Artificial Intelligence in the Practice of Law. Hastings LJ, *70*, p. 173.

100 Lescrauwaet, L., Wagner, H., Yoon, C., & Shukla, S. (2022). Adaptive Legal Frameworks and Cconomic Dynamics in Emerging Tech-nologies: Navigating the Intersection for Responsible Innovation. *Law and Economics*, *16*(3), pp. 202-220 <https://doi.org/10.35335/laweco.v16i3.61>

with technological advancements while adhering to high ethical and professional standards.[101]

The dawn of AI in law firms marks a transformative era in the legal sector, characterized by significant gains in efficiency and potential improvements in the accessibility of justice. However, this transformation also brings with it complex socio-legal challenges that must be addressed to fully realize the benefits of AI while mitigating its risks. By embracing both the potential and the pitfalls of artificial intelligence, law firms can lead the way in shaping a more efficient and equitable legal landscape.

## 6. CURRENT PRODUCTS OF AI TOOLS IN THE LAW FIELD

Recent studies have categorized the applications of artificial intelligence (AI) in the legal field into main groups, emphasizing their transformative impact on legal practices.[102] These categories reflect the diverse capabilities of AI technologies to enhance the efficiency and accuracy of legal operations.

### 6.1 First Category: Due Diligence Tasks

*Kira Systems:* This tool is renowned for aiding in due diligence by allowing lawyers to review contracts and conduct legal research more efficiently. Kira Systems helps prevent errors due to oversight or fatigue by extracting and analyzing case-related content.[103] For lawyers to achieve optimal results with Kira Systems, regular use and familiarity with the platform are essential, as it enhances their proficiency in navigating complex legal documents.[104]

*LEVERTON:* Developed by the German Institute for Artificial Intelligence, LEVERTON has been utilized in real estate transactions for document management and lease contracts. In a notable application, LEVERTON collaborated with Colliers International in 2015 to extract critical data such as due rent, maintenance costs, and expiration dates from thousands of documents, organizing this information into a coherent spreadsheet. This application demonstrates AI's potential to streamline and improve the accuracy of managing extensive legal documents.

*eBrevia:* Employed for contract review and legal amendments, eBrevia aids lawyers in identifying potential gaps that could lead to legal complications in the future. This tool enhances the thoroughness of legal analyses, ensuring that all contractual obligations and potential legal issues are adequately addressed.

### 6.2 Second Category: Predictive Technology

***Predictive Tools:*** These AI applications are crucial in anticipating future judicial decisions by analyzing specific data and information.[105] Such tools are instrumental in expediting litigation processes and increasing the likelihood of reaching settlements. By revealing likely outcomes early in the legal process, predictive tools can guide parties toward resolutions that avoid prolonged litigation, benefiting those at greater risk in a dispute.

### 6.3 Examples of Predictive AI Tools

ChatGPT, Bard, Lex Machina, and Casetext: These systems allow lawyers to analyze legal precedents, texts, and judicial patterns to forecast legal outcomes. Casetext, for example, enables lawyers to predict opposing counsels' arguments by identifying previously utilized legal opinions. This capability helps lawyers prepare more effective legal

101 Lucaj, L., Van Der Smagt, P., & Benbouzid, D. (2023, June). AI Regulation is (not) All You Need. In *Proceedings of the 2023 ACM Conference on Fairness, Accountability, and Transparency,* pp. 1267-1279 <https://doi.org/10.1145/3593013.3594079>

102 Dabass, J., & Dabass, B. S. (2018).

103 Linna Jr., D. W., & Muchman, W. J. (2020). Ethical Obligations to Protect Client Data when Building Artificial Intelligence Tools: Wigmore meets AI. *Prof. Law.*, *27*, p. 27.

104 Faggella, D. (2021, September 7). *AI in Law and Legal Practice – A Comprehensive View of 35 Current Applications*. Emerj. <https://emerj.com/ai-sector-overviews/ai-in-law-legal-practice/> (Last accessed: April 21, 2023).

105 Mejia, N. (2019, April 4). Predictive Analytics in Banking – 4 Current Use-Cases <https://emerj.com/ai-sector-overviews/predictive-analytics-banking/> (Last accessed: April 21, 2023).

strategies and anticipate challenges in their cases.

Reliability and Risks: While these tools offer significant advantages, they also require careful management to avoid reliance on potentially biased or inaccurate data. Users must be vigilant in evaluating the sources and methods used by these AI tools to ensure their reliability and ethical application.

The integration of AI in the law field through tools designed for due diligence and predictive analyses has profoundly impacted legal practices, making them more efficient and proactive. However, from the "Law and Society" perspective, it is crucial to consider how these technologies alter the landscape of legal access and equity. Meanwhile, "Legal Realism" urges a pragmatic assessment of how these tools function in actual legal settings, emphasizing the need for continuous oversight to prevent the perpetuation of existing biases or the introduction of new ones. The responsible use of AI in law firms can significantly enhance the delivery of legal services while maintaining the commitment to justice and fairness.

## 7. THE DUAL BLADES OF JUSTICE IN THE AI ERA

In the swiftly evolving realm of justice, the incorporation of artificial intelligence (AI) presents a dual-edged sword. While AI brings myriad opportunities for the justice sector, it also introduces significant challenges that must be navigated with care.

### 7.1 Opportunities Presented by AI

*Efficiency and Accessibility*: AI enhances judicial processes by automating procedures, which not only expedites case resolutions but also broadens access to justice. This is achieved through intelligent tools that bolster data analysis capabilities, helping legal professionals to identify remedies more efficiently and predict judicial rulings with greater accuracy.[106]

*Enhanced Legal Resources:* The deployment of AI in the justice sector significantly enhances the accessibility of legal resources, allowing more individuals to benefit from legal support and advice without the traditional barriers of high costs and limited lawyer availability.

### 7.2 Challenges and Risks

*Algorithmic Bias:* One of the most pressing concerns in the use of AI within litigation is the risk of algorithmic bias. If AI systems are trained on biased data, there is a risk that these biases will be perpetuated in judicial rulings.[107] This issue is of such concern that AI systems used in justice administration have been classified as high-risk under the draft of the European Union's Artificial Intelligence Act.[108] It is crucial for the development and implementation of these systems to actively mitigate bias and ensure that technical flaws do not compromise judicial impartiality.

*Privacy Concerns:* The extensive data collection and utilization by AI systems raise significant privacy issues within the justice system. The legal and ethical implications of how data is collected, used, and protected are at the forefront of discussions regarding AI in justice. The General Data Protection Regulation (GDPR) enacted by the European Union in 2018 and the disparate efforts across various U.S. states illustrate the fragmented approach to addressing these critical issues.[109] Despite some bipartisan agreement on the importance of national data privacy legislation, resistance from powerful technology lobbies has hindered unified legal standards in the United States.[110] This has led to

106 Davis, A. E. (2020). The Future of Law Firms (and lawyers) in the Age of Artificial Intelligence. *Revista Direito GV*, *16*(1), e1945 <https://doi.org/10.1590/2317-6172201945>

107 Angwin, J., Larson, J., Mattu, S., & Kirchner, L. (2022). Machine Bias. In *Ethics of Data and Analytics*. Auerbach Publications. pp. 254-264.

108 European Union. (2021). *Recital 40. In Proposal for a Regulation of the European Parliament and of the Council laying down harmonised rules on Artificial Intelligence (Artificial Intelligence Act) and amending certain Union legislative acts* <https://artificialintelligenceact.eu/recital/40/> (Last accessed: May 18, 2024).

109 The EU General Data Protection Regulation went into effect on May 25, 2018, replacing the Data Protection Directive 95/46/EC.

110 Sokolova, M. (2019). Between Business Interests and Security: American IT Giants and New Laws on Personal Data Protection. *Russia and America in the 21st Century*, (2)

a patchwork of state laws, with California leading the way and five other states considering similar regulations.[111]

The integration of AI into the justice sector offers significant advancements in terms of efficiency and accessibility, potentially transforming how justice is administered. However, the challenges it presents particularly regarding algorithmic bias and privacy, demand rigorous attention and careful management. To harness the full potential of AI while safeguarding fundamental rights, a balanced approach involving stringent regulations, transparent practices, and ongoing oversight is essential. This dual perspective ensures that as we embrace the benefits of AI, we remain vigilant about the ethical and legal standards that underpin justice in the AI era.

## 8. THE USE OF AI PRODUCTS POSES CONCERNS OF LIABILITY

The integration of artificial intelligence (AI) tools in legal practices, such as Lex Machina, Casetext, or ChatGPT, offers significant advantages in terms of data processing and legal analysis capabilities. However, these tools also introduce potential risks of bias and errors, which can lead to complex legal and ethical challenges, particularly in terms of accountability and liability.

### 8.1 Potential for Errors and Bias

AI tools process and analyze data based on the logic and information they are fed.[112] If this data is flawed or biased, the AI's outputs, such as legal advice, contract analysis, or predictive outcomes, might also be incorrect or biased. This increases the likelihood of errors during legal proceedings, raising critical questions about the accuracy and reliability of AI-assisted decisions.[113]

### 8.2 Accountability for AI-Induced Errors

When AI tools lead to erroneous outcomes or legal advice, determining who is liable, the lawyer, the law firm, or the AI developer, becomes a contentious issue.[114] This scenario is further complicated when these tools are employed in sensitive tasks like contract drafting or critical legal analyses.

### 8.3 Hypothetical Scenario Analysis

Consider a scenario where Lawyer X uses an AI platform like Casetext to provide legal advice, which turns out to be incorrect and adversely affects the client's case. Typically, liability would fall on Lawyer X or their law firm under professional liability norms. However, if it is shown that the AI tool was fundamentally flawed or provided incorrect outputs despite correct usage, the responsibility could extend to the AI tool's developers or manufacturers.

### 8.4 Complexity in Assigning Responsibility

The challenge in such scenarios is determining the extent of due diligence exercised by the lawyer in using the AI tool. If Lawyer X followed all proper procedures and relied on the AI in a manner consistent with legal standards, assigning sole responsibility to the lawyer could be seen as unjust. This situation necessitates a reevaluation of how liability is distributed among the creators, developers, and end-users of AI tools in legal settings.

## 9. LEGAL FRAMEWORKS AND FUTURE DIRECTIONS

Existing legal frameworks may need adaptation to adequately address the new realities posed by AI in legal practices. This adaptation could involve

<https://doi.org/10.18254/S207054760006015-3>

111 Rothstein, M. A., & Tovino, S. A. (2019). California Takes the Lead on Data Privacy Law. *Hastings Center Report*, *49*(5), pp. 4-5 <https://doi.org/10.1002/hast.1042>

112 AI tools process and analyze data based on the logic and information they are fed.

113 Dutta, B. M. (2018). The Ethics of Artificial Intelligence in Legal Decision Making: An empirical study. Psychology and Education Journal, 55(1) <https://doi.org/10.48047/pne.2018.55.1.38>

114 Bosley, W. B. (1894). Liability of an Attorney for Erroneous Advice. *Yale LJ*, *4*, p. 65 <https://doi.org/10.2307/783724>

creating standards for developing and testing AI tools to ensure their reliability and accuracy, as well as clear guidelines on how lawyers should use these tools. Furthermore, the legal profession may require new forms of insurance or indemnity clauses specifically designed to address the risks associated with AI tool usage.

The use of AI in law firms raises intricate questions about professional liability and the appropriate distribution of responsibility when errors occur. As AI tools become more embedded in legal operations, the legal community, together with policymakers, must develop robust frameworks to ensure that all parties involved lawyers, firms, and AI developers are fairly accountable for their roles. Such frameworks will not only protect clients' interests but also promote trust and integrity in using AI in legal practices.

## CONCLUSION

The digital transformation of justice systems is not merely a technological enhancement but represents a profound socio-legal shift in modern legal frameworks. Through the lenses of "Law and Society" and "Legal Realism," the integration of digital tools in the justice sector underscores a dual necessity: to adapt legal structures to contemporary societal demands and to maintain an equitable balance in access to justice.

Digitalizing justice has shown significant potential in enhancing efficiency, transparency, and inclusivity within judicial processes. This transformation was notably accelerated by the COVID-19 pandemic, which forced a pivot from traditional in-person engagements to digital platforms, thereby not only maintaining but potentially enhancing access to justice. However, this shift also brings to light the profound challenges and disparities that exist, particularly in regions with limited digital infrastructure or where socio-economic factors hinder equitable access to these new tools.

The application of digital tools has had varying levels of success across different jurisdictions, reflecting a broader spectrum of readiness and adaptation to digital justice. Countries like Denmark and Portugal have seen advancements, whereas others still face significant hurdles due to infrastructural and socio-economic constraints.

Going forward, it is crucial that the digitalization of justice is approached not just with an eye towards technological advancement but also through a critical socio-legal framework that ensures these technologies are accessible, fair, and effective for all segments of society. The role of legislative support is instrumental in creating a conducive environment for these transformations. Legislators must craft policies that not only address the integration and standardization of digital tools but also consider the broader socio-legal impacts, such as privacy, cybersecurity, and the potential for digital divides.

As we look to the future, particularly with the emerging role of artificial intelligence (AI) in the justice sector, the need for a balanced approach becomes even more critical. AI presents vast potential for enhancing legal processes but also introduces complex ethical and legal challenges that must be navigated carefully to avoid exacerbating existing disparities or introducing new forms of bias.

In conclusion, while the digital transformation of justice is an imperative step towards modernizing legal systems, it requires a nuanced and inclusive approach that adheres to the principles of legal equity, social justice, and human rights. The successful integration of these technologies into judicial systems worldwide will depend not only on the technological capabilities but also on the socio-legal frameworks that support them. Thus, ensuring that the digitization of justice contributes positively to the overall functionality of legal systems and upholds the fundamental principles of law and society.

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