ADVANCING ACCESS TO JUSTICE VIA INFORMATION AND COMMUNICATIONS TECHNOLOGY:

A Literature Review

World Justice Project

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Note

Added February 2025

This literature review has been prepared by the World Justice Project (WJP) for the World Bank (WB) as part of a collaborative effort to develop the *Assessment Tool for ICT-Driven Reforms in Family Justice*.[1] One of the key contributions of this literature review is the emphasis on a people-centered approach to analyzing justice technologies. In line with WJP's existing body of access to justice research,[2] this literature review is conducted through the lens of people-centricity, emphasizing first and foremost the perceptions and experiences of everyday people. This approach is critically important to understanding the true opportunities, impacts, and risks of justice technologies.

As this paper will discuss, the researchers find that the application of a people-centered analytical lens to the literature on ICTs and justice services offers new insights into the functions, opportunities, and risks related to justice technologies. Specifically, this literature review is informed by a mapping of research and justice technology examples that considered three angles: the intended user of the justice technology (e.g., justice institutions, people with justice problems, etc.), the types of legal needs the technology is oriented to address, and the stage in people's justice journey where the technology is relevant.

This literature review was completed in October 2022 as one of the first stages of the development of the *Assessment Tool for ICT-Driven Reforms in Family Justice*. It is important to note that there have been advancements in justice technologies and ICTs more broadly since then. Notably, the release of ChatGPT in November 2022[3] and the subsequent boom in more mainstream applications of large language models and other generative artificial intelligence (AI) tools have, in many ways, shifted the conversation around the applications of ICTs—particularly AI—in the justice system and society at large.

While the significance of these developments is undeniable and new justice technologies have been developed since this literature review was concluded, it is neither feasible nor the primary goal of our review to capture every new tool as it emerges. Instead, this paper demonstrates the value of a people-centered analytical framework for evaluating current and future innovations, specifically their potential for advancing access to justice and closing the justice gap. For example, generative AI-based tools such as ChatGPT can and should be evaluated through the lens of people-centricity: who can produce generative AI tools, and who has access to use them? For people with justice problems, what are the potential benefits offered by generative AI tools? What are the risks and barriers to using them? Is the use of generative AI within justice services ultimately contributing to closing the justice gap? Are new justice problems arising?

ICTs continue to advance and evolve every day. Actors who are committed to the effective implementation of justice technologies will regularly have to evaluate new options. The use of a people-centered approach such as the one offered here can support decision-making amid an ever-changing technological landscape, emphasizing impact over technical novelty.

Contact Daniela Barba, PhD, Director of Research, Access to Justice with any questions (dbarba@worldjusticeproject.org).

[1] WJP and WB, forthcoming.
[2] See: *Dissecting the Justice Gap: WJP Justice Data Graphical Report I and Disparities, Vulnerability, and Harnessing Data for People-Centered Justice* (WJP 2023); Global Insights on Access to Justice (WJP 2019); and Measuring the Justice Gap (WJP 2019).
[3] "Introducing ChatGPT," OpenAI. November 30, 2022. https://openai.com/index/chatgpt/.

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About the Korea-World Bank Partnership Facility

The Access to Justice and Technology: Using ICT to Close the Justice Gap project is supported by the Korea-World Bank Partnership Facility (KWPF), a single-donor trust fund fully funded by the government of South Korea and administered by the KWPF Program Management Team within the World Bank Group. KWPF supports projects that identify, implement, and scale sustainable development solutions in developing countries around the globe, drawing on the significant experience and expertise gained by South Korea across its own development journey.

Our story

Korea's incredible journey from a recipient of international development aid to a donor country within just one generation inspired the creation of KWPF. In 2013, the World Bank Group (WBG) and the Republic of Korea's Ministry of Economy and Finance (MoEF) established KWPF to deepen joint efforts to identify, implement, and scale sustainable development solutions for emerging countries around the globe. KWPF is the largest MoEF trust fund managed by a multilateral development bank and is the largest of the nine Korean single donor WBG-managed trust funds. The WBG KWPF Program Management Team administers the Facility.

Mission

KWPF prioritizes the financing of activities aligned with the WBG's priorities and with Korea's development cooperation priority areas, including health, infrastructure, private investment and job creation, human resource development, entrepreneurship and trade, financial inclusion, growth with resilience, food security, domestic resource mobilization, and knowledge sharing. Sharing the expertise Korea acquired during its own development journey with low- and middle-income countries is a significant priority in KWPF's work.

Values

Innovation is at the heart of the Korea-WBG partnership. This dedication to innovation informs all KWPF activities to support low- and middle-income countries that seek to adapt and apply Korea's development experience and technical expertise to achieve inclusive and sustainable development.

Contents

Abbreviations

A2J	Access to Justice
ABA	American Bar Foundation
AI	Artificial Intelligence
CEPEJ	European Commission for the Efficiency of Justice
EFTA	European Free Trade Association
GDP	Gross Domestic Product
HiiL	Hague Institute for Innovation of Law
IAALS	Institute for the Advancement of the American Legal System
ICT-A2J	Information and communications technologies-enabled access to justice
ICT	Information and Communications Technology
LGBTQI+	Lesbian, Gay, Bisexual, Transgender, Queer, and Intersex
ODR	Online Dispute Resolution
OECD	Organisation for Economic Co-operation and Development
OSJI	Open Societies Justice Initiative
Pathfinders	Pathfinders for Peaceful, Just and Inclusive Societies
QR	Quick Response (with regard to a QR code)
SDG	Sustainable Development Goal
SMS	Short Message Service
UN	United Nations
UNDP	United Nations Development Programme
UNODC	United Nations Office on Drugs and Crime
USSD	Unstructured Supplementary Service Data
WJP	World Justice Project

1 Introduction

a. Background

Around the world, approximately half of all people are estimated to have experienced a justiciable civil or administrative problem in recent years. Initially conceptualized by Dame Hazel Genn, a justiciable problem[4] is a dispute that "might have a legal solution,"[5] regardless of whether the parties involved recognize the legal nature of the problem or they take legal action.[6] Justiciable problems can range from simple traffic violations to significant asset disputes, and can vary in terms of their severity and importance to those who experience them. Based on household surveys of more than 100,000 people in 101 countries, WJP finds that 49 percent of people surveyed experienced a justiciable problem in the two years prior to being surveyed. The most frequent problems are those related to consumer issues, housing, and money and debt.[7]

The ubiquity of justiciable problems is paralleled by frequent injustice, as access to justice remains out of reach for the majority of the global population. In 2019, the WJP estimated that 5.1 billion people—two-thirds of the worldwide population—do not have access to justice for one of the following reasons: a) they cannot obtain justice for civil, administrative, or criminal justice problems; b) they are excluded from the opportunities the law provides; or c) they live in conditions of extreme injustice including statelessness or modern slavery.[8] More than a quarter of the justice gap is made up of people who are specifically unable to resolve civil or administrative justice problems.

"The justice gap can be understood as the number of people who have at least one unmet justice need. These are people who are ultimately not getting the justice they need for both everyday problems and severe injustices."[9]

There are many reasons why people are unable to resolve their justice problems. A common barrier to justice is a lack of legal awareness: fewer than one-third of people who experienced a justice problem understood that their problem had a legal remedy. A lack of necessary financial resources or the untimeliness of the justice system are barriers for approximately one in six people with a justice problem.[10]

Information and Communication Technologies (ICTs) can be a promising tool for improving the efficiency, accessibility, and cost effectiveness of justice services as well as empowering its users

[4] Throughout this document, the terms "justiciable problem" and "justice problem" may be used interchangeably.
[5] "Paths to justice: reshaping the public's access to the judicial system," UCL Faculty of Law, University College London, Accessed on 7 July 2022. https://www.ucl.ac.uk/laws/research/ref-2014/paths-justice-reshaping-publics-access-judicial-system.
[6] Pascoe Pleasence, Nigel J. Balmer, and Rebecca Sandefur, "Paths to Justice: A Past, Present and Future Roadmap" (Centre for Empirical Legal Studies, Nuffield Foundation, 2013): iii, https://www.researchgate.net/publication/271209897_Paths_to_-Justice_A_Past_Present_and_Future_Roadmap/link/54c226c60cf219bbe4e62b1e/download.
[7] "Global Insights on Access to Justice," 6.
[8] "Measuring the Justice Gap" (Washington, DC: World Justice Project, 2019): 5, https://worldjusticeproject.org/our-work/research-and-data/-access-justice/measuring-justice-gap.
[9] "Measuring the Justice Gap," 4.
[10] "Global Insights on Access to Justice," 7.

and strengthening people's legal awareness. Many justice systems and actors have been utilizing ICTs for years and the COVID-19 pandemic further accelerated the uptake of ICTs-based justice services due to the need to minimize in-person interactions. Even so, there remains notable room for improvement and expansion of the use of justice ICTs.

b. Problem Statement

Justice systems around the world struggle to fulfill their obligations and meet people's needs. There are various barriers that can impede the resolution of justiciable problems and contribute to the justice gap. A common barrier is a lack of legal awareness: only 29 percent of people who experienced a justice problem recognized that the issue was legal in nature. Approximately 1 in 6 people with a justice problem struggle to access the requisite financial resources for resolving it.[11] Further, the *WJP Rule of Law Index*® 2021 finds that a majority of countries have experienced erosions of their civil and criminal justice systems. From 2015 to 2021, 70 percent of countries covered in the *WJP Rule of Law Index* declined in their performance on Factor 7: Civil Justice. Similarly, 67 percent of countries declined in their performance on Factor 8: Criminal Justice. During the COVID-19 pandemic, two-thirds of countries covered by the WJP Rule of Law Index experienced increased delays in civil justice compared to the year prior.[12]

There are myriad ways in which ICTs can contribute to improving access to justice. On the supply side—that is, for justice institutions and service providers—ICTs could be leveraged to streamline and expedite service delivery, minimizing delays. ICTs can also help justice systems make more efficient use of their limited resources and even save some operating costs. From the demand side, ICTs can make it easier for people with justiciable problems to resolve their problems. For example, ICTs can be used to spread information and share educational resources, which may support the cultivation of legal awareness and empowerment, enabling people to better recognize the legal elements of problems they encounter. Accessibility is a critical component of access to justice; ICTs can support people in more readily connecting with the services they require by lowering barriers to justice that result from geography and socio-economic characteristics, among others.

While many justice actors generally recognize the opportunities offered by ICTs, particularly those opportunities on the supply side of justice services, there is a lack of systematic understanding as to how ICTs can be most effectively leveraged on the demand side to improve people-centered justice. Globally, justice problems are ubiquitous[13] but people's experiences of those problems and their paths to justice vary greatly.[14] Furthermore, there remains significant variance in ICT availability and use both across and within countries. Consequently, ICTs are no silver bullet for closing the justice gap. In fact, the use of ICTs can neglect people's needs and even deepen inequalities on the demand side if they are not deployed in a people-centered manner, worsening the justice gap. To ensure people-centricity, it is critical to look beyond the supply of justice services and assess the opportunities available at the nexus of people's unique needs and available resources.

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[11] "Global Insights on Access to Justice," 7.
[12] "World Justice Project Rule of Law Index 2021 Insights" (Washington, DC: World Justice Project, 2021): 28, https://worldjusticeproject.org/sites/default/files/documents/WJP-INSIGHTS-21.pdf.
[13] "Global Insights on Access to Justice," 6.
[14] See, for example, the country profiles presented in "Global Insights on Access to Justice."

c. Goal

This literature review seeks to identify and assess existing research on people-centered justice, ICTs-based justice services, and key factors enabling the use of ICTs in promoting access to justice. The goal of this assessment is to systematically evaluate what opportunities, risks, and barriers are surfaced in the literature through the application of a people-centered research lens. In turn, this will inform the development of a conceptual framework that will culminate in an assessment tool for use at the country level. The assessment tool will support decision makers in determining the potential benefits and opportunities, as well as the corresponding risks and barriers, to pursuing a justice technology initiative in their context.

d. Scope

The existing body of research has evidenced the critical importance of advancing access to justice in support of human rights, economic development, and the 2030 Agenda for Sustainable Development. This literature review builds off previous research by the WJP and other organizations, including the World Bank, the Pathfinders for Peaceful, Just and Inclusive Societies (Pathfinders), the Hague Institute for Innovation of Law (HiiL), and the Organisation for Economic Co-operation and Development (OECD).

Starting from the understanding that upholding access to justice is a major responsibility of the global community, the primary focus of this literature review is examining the opportunities offered by ICTs to advance access to justice and identifying the critical factors to be considered when pursuing a justice technology initiative. This literature review considers applications of ICTs in the justice sector, including the use of ICTs by formal justice actors, as well as informal justice actors and justice system users. Given the orientation of this research towards the development of an assessment tool, the primary emphasis here is that of public policymaking. Similarly, the conceptualization of justice technologies in this literature review is broad. It attempts to consider all relevant types of ICTs, ranging from relatively basic document digitalization to artificial intelligence (AI) and blockchain. Geographically, the scope is global and inclusive of a variety of countries and developmental contexts.

e. High-Level Findings

Multiple frameworks for organizing justice technologies are identified in the existing literature, but there is a lack of cohesion among them. For example, Cordella and Contini (2020) offer two broad categories for justice technologies: those that improve existing justice operations and those that drive innovation in the justice sector.[15] These categories reflect from the overall goal and impact of a justice technology. Tashea (2021) takes an alternative perspective and develops a platform approach for thinking about justice technologies. Tashea (2021) proposes a vision of a cohesive digital justice system where all justice technologies can be identified as part of one of four layers: the information layer, the trust and consent layer, the common technology layer, and the services layer.[16]

[15] Antonio Cordella and Francesco Contini, "Digital Technologies for Better Justice" (Washington, DC: Inter-American Development Bank, April 2020): xi, https://publications.iadb.org/publications/english/document/Digital-Technologies-for-Better-Justice-A-Toolkit-for-Action.pdf.

Both frameworks offer helpful insights when used to organize existing justice technologies and understand their relationships to one another.

Building off the WJP's prior work, this literature review takes a people-centered approach to assessing justice technologies and the existing body of literature. Access to justice can be assessed through multiple lenses: first, the targeted beneficiary – either institutional or individual actors; second, the involved category of legal need; third, the component of the justice journey involved; and fourth, the external factors that influence justice outcomes. The literature on justice technology can also be analyzed in relation to these various lenses on access to justice.

Actors on the institutional side include both public and private actors ranging from lawyers, law firms, and civil society to courts and judiciaries. In comparison, individual actors include the general population as well as sub-groups with specific experiences in the justice system, such as pro se litigants, incarcerated individuals, and vulnerable groups. When reviewing the literature and identifying the key recommendations as they relate to designing and implementing justice technology, it is important to take all these actors into consideration as the potential opportunities and benefits offered by justice technologies will vary, as will the corresponding risks and barriers. The literature suggests that while the types of justice technologies utilized by institutional and individual actors vary, they share the goal of improving access to justice. For example, many justice technologies utilized by institutional actors are oriented towards improving operational efficiencies, while those targeted towards individuals generally try to enrich the user experience of the justice system. While the approach may differ, these two paths proceed towards a common goal.

Similarly, analyzing the existing literature on justice technology through the lenses of targeted categories of legal needs and relevant components of the justice journey offers important insights into the takeaways of existing research, as well as the areas for future study. The literature indicates that existing justice technologies target various types of civil justice needs; however, coverage is not uniform. Some types of civil justice problems, specifically family and consumer-related issues, are more prone to intervention via justice technologies. On the other hand, there are some types of civil legal needs for which few, if any, examples were identified.

Applying the justice journey framework to the literature suggests another type of imbalance: justice technologies seem more common at some stages of the justice journey than others. For example, a significant section of the literature is focused on online dispute resolution (ODR), one of the first and most common examples of justice technology. ODR has been adopted to many contexts and issues and seems to prove generally effective. Alternatively, there seems to be less discussion of justice technology relative to the earlier stages of the justice journey, including legal capability, awareness, and confidence, and sources of help and advice. While the resolution, mediation, and adjudication stages of the justice journey may be more primed for justice technology intervention, prioritizing the earlier stages is also important for addressing justice needs as soon as possible.

The literature suggests that there are notable benefits to be generated through justice technology uptake, but those are accompanied by corresponding risks and barriers. Figure 1 summarizes the benefits offered by justice technologies, as well as the corresponding risks and

[16] Jason Tashea, "Justice-as-a-Platform" (MIT Computational Law Report, December 7, 2021): 4, https://law.mit.edu/pub/justiceasaplatform#n3ap1aayy7p.

barriers. The identified benefits include improving efficiency and cost effectiveness; empowering users; making justice services more accessible; and improving access to justice. However, the benefits and opportunities offered by justice technologies are not without risks. Policymakers and other actors should be conscientious of the risks including infringements on trust and privacy, exclusion, impediments to civil rights, and threats to the preservation of due process. Additionally, some common barriers that can prevent the uptake of justice technology include capacity constraints, financial constraints, unfriendly regulatory environments, and a lack of political will.

Figure 1: Summary of Benefits, Risks, and Barriers Relevant to Justice Technology

Current justice technology uptake and implementation varies by country and context. In order to incorporate a geographic lens into the literature review, the mapping of literature to the category of legal needs addressed was done via a matrix, so that examples of justice technologies were mapped based on the types of legal needs they addressed and the geographic regions from which they originated. There are examples of justice technology initiatives from all regions of the world and in all economic contexts. However, the literature suggests that justice technology initiatives are more common in relatively wealthier and more digitally connected contexts. Furthermore, the types of justice technology initiatives pursued in a given context may depend on broader justice or governance strategies.

The actual impacts of justice technology initiatives are mixed. Examples of ICTs successfully enriching access to justice in some situations are balanced by cases in which the use of ICTs failed to fulfill established goals. Furthermore, the literature points to situations in which well-intentioned justice technologies ultimately compound existing justice issues, generating a net loss and worsening the situation. Research from Dhru et al. (2021) found that experts in the justice technology space "found it hard to mention successful innovations," suggesting that failure may be more common than success.[17] This highlights the need for further innovation and research, particularly related to impact evaluation and assessment.

"The dialogue regarding access to justice and technology can too easily fall prey to a sort of technological determinism that implicitly assumes that technological change is inevitable, unstoppable and certain to enhance access to justice."[18]

[17] Kanan Dhru, Manasi Nikam, and Maurits Barendrecht, "Use of Digital Technologies in Judicial Reform and Access to Justice Cooperation" (The Hague, The Netherlands: The Hague Institute for Innovation of Law, 2021): 4, https://www.hiil.org/wp-content/uploads/2021/11/HiiL-Use-of-digital-technologies-in-judicial-reform-and-access-to-justice-cooperation.pdf.

[18] Jane Bailey, Jacquelyn Burkell, and Graham Reynolds, "Access to Justice For All: Towards an 'Expansive Vision' of Justice and Technology," Windsor Yearbook of Access to Justice 31, no. 2 (October 1, 2013): 182, https://doi.org/10.22329/wyaj.v31i2.4419.

Overall, justice technology alone is not a complete solution to the access to justice crisis; rather, it is a tool that may support the advancement of access to justice if—and only if—it is leveraged in line with the people-centricity quality of service criteria. As is true in other fields, justice technology is only as good as its design, implementation, and impact. The literature underscores the need for careful, nuanced consideration of justice technologies. Bailey, Burkell, and Reynolds (2013) suggest that the use of ICTs should not be seen as the only option, noting that "the relationship between access to justice and technology is neither necessary nor necessarily positive."[19] As stated in Keith and O'Brien (2021), "technology is not a panacea," but "it can be a catalyst for bold initiatives that reduce barriers and make the law a more accessible and responsive tool for individuals and communities" when it is paired with community engagement and robust information.[20] McCoubrey (2022) highlights how discussion of e-justice can run the risk of losing sight of the end goal: "the goal when using these tools must stay on their impact on access to justice, equality and human rights protections, not the operational efficiencies."[21] Maintaining a people-centered approach is critical to ensuring that justice technologies are developed and deployed in a successful manner with orientation towards effectively closing the justice gap, rather than digitalizing justice for the sake of it.

f. Roadmap

This report is laid out in the following way: Section II provides the foundation for the analysis, defining people-centered justice, paths to justice, and who the population of reference is, while also highlighting the relevance to the global sustainable development agenda. Section III discusses the research methodology, including the research questions and the process for identifying literature. Section IV leverages the structure of the research questions to discuss the findings of the literature review. Section V discusses structural and environmental factors that influence justice technology uptake and outcomes. Section VI lays out the path forward, identifying key gaps in the literature, outstanding questions, and considerations for the development of a conceptual framework to inform decision making around justice technology.

[19] Bailey, Burkell, and Reynolds, "Access to justice for all" 183.
[20] Liz Keith and Mark O'Brien, "Connecting Access to Advocacy: A Role for Technology in Legal Empowerment," Georgetown Law Technology Review 5 (2021): 130.
[21] Sarah McCoubrey, "E-Justice: Digital Transformation to Close the Justice Gap" (New York: United Nations Development Programme, 2022): 9-10, https://www.undp.org/sites/g/files/zskgke326/files/2022-06/E%20justice-Report%2005.pdf.

2 Access to Justice (and Lack Thereof)

a. What Is People-Centered Justice?

A people-centered approach to access to justice centers the lived experiences of individuals and communities. As defined by the Task Force on Justice, "a people-centered approach to justice starts with an understanding of people's justice needs and designs solutions to respond to them."[22] WJP's understanding of people-centered justice emphasizes the following: the lived experiences of people on all sides of a justice problem (including both those who experience and perpetrate justice problems); a holistic understanding of justice journeys and the barriers to justice that can arise throughout; data-driven and evidence-informed responses; participatory policy initiatives that include public and private actors; and strengthening public accountability of justice institutions through open justice policies. This approach challenges the traditional, institution-centered theory of justice that focuses on formal justice institutions and actors. People-centricity is a core value of the WJP and undergirds research products including *Global Insights on Access to Justice* (2019) and *Measuring the Justice Gap* (2019).

Access to justice is the "ability of people to seek and obtain a remedy through formal or informal institutions of justice for grievances in compliance with human rights standards."[23]

b. What Are the Paths to Justice?

There is no singular, linear path to justice and many justiciable problems are resolved outside formal justice institutions. The "Paths to Justice" concept, as articulated in Pleasence et al. (2013), "recognises that law does not always provide the best context for problem solving." A holistic understanding of access to justice requires considering all problems that may have a legal solution, regardless of if they are resolved using formal justice institutions.[24] For any given justiciable problem, there may be multiple options for resolution. As HiiL articulates in their research methodology, these various options can be considered justice journeys: "The concept of a justice journey recognizes that there are many different steps to resolve a problem. Most often these steps are not linear. The entirety of steps that people take to resolve a problem is a justice journey."[25]

T**he WJP's research is rooted in the recognition that no individual justice journey is the same.** The *WJP Global Legal Needs Survey* is developed out of eleven themes that build off the paths to justice tradition.[26] (Box 1). Three of those eleven themes correspond to the types of justice problems

[22] Task Force on Justice, "Justice for All - Final Report" (New York: Center for International Cooperation, 2019): 17, https://www.justice.sdg16.plus/report.
[23] "Necessary Condition: Access to Justice," United States Institute of Peace, accessed on June 21, 2022. https://www.usip.org/guiding-principles-stabilization-and-reconstruction-the-web-version/rule-law/access-justice#:~:text=7.8.&text=283%20Access%20to%20justice%20is,compliance%20with%20human%20rights%20standards.
[24] Pleasence, Balmer, and Sandefur, "Paths to Justice: A past, present and future roadmap," iii.
[25] "Justice Dashboard - Methodological Note," Hague Institute for Innovation of Law, accessed September 12, 2022, https://dashboard.hiil.org/-justice-dashboard-methodology/.
[26] "Global Insights on Access to Justice," 6.

and stages of the justice journey discussed above. Those are (1) sources of help and advice (professional and informal); (2) legal capability, awareness, and confidence; and (3) resolution process (through informal or formal means).[27] The OECD similarly identifies separate types of problem resolution behavior, albeit in a slightly different form than the WJP. The OECD identifies three broad categories: help seeking, use of processes, and other activities.[28]

Box 1: The 11 Themes of the WJP Global Legal Needs Survey

The *WJP Global Legal Needs Survey* is developed from the following eleven key themes: [29]

1. Types of legal problems experienced in the last two years.
2. Problem seriousness.
3. Sources of help and advice, both professional and informal.
4. Residual problem resolving behavior, such as attempts to learn more about the legal issue.
5. Reasons for advice not being obtained.
6. Resolution process, through both formal and informal means.
7. Fact and manner of conclusion.
8. Perceptions of the quality of the process and outcome.
9. Cost of problem resolution.
10. Legal capability, awareness, and confidence.
11. Impact of experiencing a legal problem.

The data indicate that the majority of justice journeys do not include interactions with formal court processes. Data from the *WJP Global Legal Needs Survey* finds that only 17 percent of respondents globally "took their problem to an authority or third party to mediate or adjudicate their problem, with most preferring to negotiate directly with the other party."[30] This is reinforced by data from other sources. For example, a legal needs survey carried out by HiiL and Institute for the Advancement of the American Legal System (IAALS) in the United States found that only 14 percent of respondents sought help from the court system.[31] Understanding the variety of paths to justice that individuals may pursue—both within and beyond the formal justice system—is vital to designing and delivering effective justice services. Justice services, including ICT-based services, should be responsive to specific justice needs and not limited to the purview of formal justice institutions.

c. Who is Included in a People-Centered Approach?

The inclusive nature of the people-centricity paradigm demands consideration of all individuals who experience justice problems, regardless of whether they recognize the legal aspects of their problems or if they seek resolution through justice services. As described by the OECD and WJP, "access to justice is first and foremost concerned with the case of people who experience the greatest challenges in upholding their formal rights."[32] Depending on the context, the population of refer-

[27] "Global Insights on Access to Justice," 5.
[28] "Legal Needs Surveys and Access to Justice" (Paris: OECD, Open Societies Foundation, 2019): 72, https://www.oecd.org/gov/legal-needs-surveys-and-access-to-justice-g2g9a36c-en.htm.
[29] "Global Insights on Access to Justice," 5.
[30] "Global Insights on Access to Justice," 7.
[31] "Justice Needs and Satisfaction in the United States of America," 104-105.
[32] "Building a Business Case for Access to Justice," Organisation for Economic Co-Operation and Development and World Justice Project, 5. https://blog.kleros.io/content/files/gov/building-a-business-case-for-access-to-justice.pdf.

ence can include people of all ages—including children and adolescents—and sociodemographic backgrounds. Globally, there are an estimated 4.5 billion people who are excluded from the opportunities the law provides due to their lack of identify documentation, proof of assets, or ability to engage in formal work.[33] Truly people-centric initiatives recognize these barriers to full socio-legal participation and proactively seeks to engage with individuals experiencing such marginalization. Furthermore, a people-centered approach emphasizes holistic consideration of both people who have experienced injustice and those who have perpetrated it.

With multi-stakeholder participation as a key tenet of people-centered justice, the private sector cannot be ignored. Businesses are important partners in advancing economic growth and access to justice. Further, they can encounter barriers to justice. Just as some groups of people are more vulnerable to injustice than others, power asymmetries can impede the operation of private entities and challenge economic growth more broadly. According to the World Bank, small and medium-sized enterprises (SMEs) represent approximately 90 percent of businesses globally and create seven out of ten jobs in emerging markets.[34] Research in Colombia found that SMEs experienced the greater barriers to justice than larger businesses, which can impede future business success.[35]

As the conversation on justice technology advances, so should efforts to mainstream people-centricity. While this paper largely focuses on individuals seeking justice, rather than on businesses and other private entities, further consideration of how justice technologies can serve businesses of all sizes is needed. One of the primary contributions of this paper is the application of a people-centered analytical lens. While beyond the scope of this paper, there is a need for similar analyses of literature on the applications of justice technologies for businesses, as well as in the criminal justice sector and the opportunities for service providers on the supply side.

d. Why Is Access to Justice Important?

People-centered justice is a cornerstone of the global development agenda. First and foremost, unresolved justice problems are a human rights issue: the United Nations Development Programme (UNDP) notes that "access to justice is a fundamental right, as well as a key means to defend other rights."[36] Access to justice is central to Sustainable Development Goal (SDG) 16.3, which commits United Nations member states to "promote the rule of law at the national and international levels and ensure equal access to justice for all."[37] With less than eight years left to achieve the SDGs and the 2030 Agenda, global actors must seek out and embrace innovative and impactful justice strategies.

Unmet justice needs are costly to both the people they directly impact and to societies at large. At the individual level, unresolved justice problems have significant financial, health, and emotional consequences.[38] *Global Insights on Access to Justice* (2019) found that 43 percent of respondents who experienced a justice problem suffered from a negative consequence as a result, including ill health

[33] "Measuring the Justice Gap," 5.
[34] "Small and Medium Enterprises Finance," World Bank. Accessed January 30, 2025. https://www.worldbank.org/en/topic/smefinance.
[35] Juan Carlos Botero et. al, "Justice Fair Play Initiative," Atlantic Council, 9. https://issuu.com/atlanticcouncil/docs/justice_fair_play_report_2024.
[36] "Programming for Justice: Access for All" (New York: United Nations Development Programme, 2005): 3, https://www.un.org/ruleoflaw/blog/document/programming-for-justice-access-for-all-a-practitioners-guide-to-a-human-rights-based-approach-to-access-to-justice/.
[37] "SDG Indicators - Metadata Repository," United Nations Department of Economic and Social Affairs Statistics Division, accessed October 12, 2022, https://unstats.un.org/sdgs/metadata/?Text=&Goal=16&Target=16.3.
[38] Alejandro Ponce, "Justice for Some: Legal Needs and Access to Justice in 101 Countries," Manuscript in preparation.

(more than 1 in 4 people) or job loss or relocation (more than 1 in 5 people).[39] At the macroeconomic level, research from the WJP and the OECD found that unresolved civil and administrative justice problems cost countries an estimated 0.5 percent to 3 percent of GDP.[40]

Justice issues and poverty are interrelated. The OECD recognizes that "the inability to access justice can be both a result and a cause of disadvantage and poverty. Unmet justice needs can lead to social, physical and mental health problems, lost productivity, and reduced access to economic opportunity, education, and employment."[41] Research from HiiL and the World Bank analyzed data from more than 71,000 respondents across 13 countries and found that "poverty itself is not generating more legal problems but it creates mechanisms through which the poor systematically receive worse justice outcomes."[42] Legal needs survey research conducted in the United States by HiiL and IAALS similarly found that negative consequences of justice problems are not equally distributed, and that people from low-income households are more likely to experience negative consequences than their wealthier counterparts.[43] Working towards the elimination of poverty requires consideration of access to justice.

[39] Global Insights on Access to Justice" (Washington, DC: World Justice Project, 2019): 7, https://worldjusticeproject.org/sites/default/files/documents/WJP-A2J-2019.pdf.[40] "Small and Medium Enterprises Finance," World Bank. Accessed January 30, 2025. https://www.worldbank.org/en/topic/smefinance.

[40] "Building a Business Case for Access to Justice" (Paris: Organisation for Economic Co-operation and Development and Washington, DC: World Justice Project, 2017): 1, https://www.oecd.org/gov/building-a-business-case-for-access-to-justice.pdf.

[41] "Equal Access to Justice for Inclusive Growth: Putting People at the Centre" (Paris: OECD, 2019): 15, https://doi.org/10.1787/597f5b7f-en.

[42] Martin Gramatikov et al., "Poverty and Access to Justice" (The Hague: Hague Institute for Innovation of Law, 2021): 6, https://www.hiil.org/wp-content/uploads/2021/10/HiiL-report-Poverty-and-Access-to-Justice-web.pdf.

[43] "Justice Needs and Satisfaction in the United States of America" (The Hague: The Hague Institute for Innovation of Law and Denver: The Institute for the Advancement of the American Legal System, 2021): 76-77, https://iaals.du.edu/publications/justice-needs-and-satisfaction-united-states-america.

3 Research Methodology

a. Research Questions

As described in the problem statement, the rapid evolution of ICTs and increasingly frequent usage of them in the justice sector has not been complemented by a systematic understanding of how they can be leveraged in support of people-centered justice, thus leaving interested decisionmakers without a solid information base to inform their actions. In response, the four central questions outlined in Box 2, serve as the basis for this literature review. While these questions are not meant to be exhaustive, they serve as a starting point for identifying and analyzing relevant literature.

Box 2: Research Questions

- How can ICTs-based interventions address unmet justice needs?
- How can ICTs-based interventions support actors throughout the justice ecosystem?
- How can ICTs-based interventions be leveraged during various stages of the justice journey?
- What other factors influence the design, implementation, and impact of justice technology?

How can ICTs-based interventions address unmet justice needs? The relatively simple terminology of ICTs masks the complexity of existing and emerging technologies, the varying benefits and risks associated with them, and the nuanced ways in which they impact outcomes. This research question opens the realm of justice technologies and seeks to identify a wide swath of literature to understand how justice technologies can be used to address unmet justice needs.

How can ICTs-based interventions support actors throughout the justice ecosystem? Justice technologies can be assessed through various lenses, including the targeted actor. This research question builds upon the first to explore another dimension of justice technologies. Understanding how justice technologies can be used by—and generate benefits for—various actors throughout the justice ecosystem is important for developing a holistic understanding of justice technology.

How can ICTs-based interventions be leveraged during various stages of the justice journey? Expanding on the first two research questions, this question seeks to identify and assess literature that discusses the relation of justice technology to the various stages of the justice journey. As there is no singular articulation of the stages of the justice journey, this lens utilizes three of the themes from the WJP Global Legal Needs Survey as an organizational framework. Literature is assessed via the relationship between justice technologies and (1) sources of help and advice; (2) legal capability, awareness, and confidence; and (3) resolution processes.

What other factors influence the design, implementation, and impact of justice technology? Recognizing that policies and projects are not implemented in vacuums, this question is oriented towards assessing what the literature finds about relevant external factors. While decision makers may have less control over these factors, it is still important to understand them in order to plan the most effective justice technology initiatives.

b. Process

Identification of Sources

Building on the WJP's existing research on access to justice, relevant sources were identified through leading researchers and organizations, bilateral and multilateral donors, relevant events, and targeted searches. Source identification was conducted using the Google Scholar search platform, as well as the standard Google search engine. Searches were done utilizing different combinations of various keywords include the following: "access to justice," "justice technology," "legal technology," "digital justice," "e-justice," "artificial intelligence," and "digitalization," among others. As discussed below, the literature review was guided by a set of research questions that were defined early in the research process. These questions also informed the identification of sources.

In order to identify examples of justice technology initiatives carried out by bilateral and multilateral donors, websites for the following institutions were reviewed: United Kingdom Foreign, Commonwealth & Development Office (FCDO); United States Agency for International Development (USAID); Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ); Swedish International Development Agency (SIDA); United States Millennium Challenge Corporation (MCC); Netherlands Development Cooperation; Japan International Cooperation Agency (JICA); and the Canadian International Development Agency.

The following development banks were reviewed as well: European Investment Bank (EIB), Inter-American Development Bank (IDB), International Finance Corporation (IFC), Islamic Development Bank (IsDB), African Development Bank (AfDB), Asian Development Bank (ADB), European Bank for Reconstruction and Development (EBRD), and the World Bank (WBG). The websites of these financial institutions were reviewed in an attempt to identify justice technology initiatives that received funding, with the intent to broaden the scope of the search and identify additional examples of existing initiatives around the world.

Review Process

Sources were reviewed through an iterative process. First, sources deemed relevant were compiled in a reading list. Second, the sources were reviewed more closely to identify those most immediately relevant to the aforementioned research questions and research goals. To complement this brief, a literature directory has been developed. This directory lists all the sources included in this summary, as well as some additional sources that were reviewed as part of the literature review process but were ultimately deemed to be less relevant. Information included in the literature directory includes the resource title, author, publication date, institutional affiliation, web link, and summary. In addition to the list of sources, three analytical maps have been developed to illustrate how the literature covers various institutional and individual actors in the justice ecosystem, specific categories of justice needs, and the stage of the justice journey under consideration. The analytical maps are structured as matrices: the literature maps considering the targeted actor and the stage of the justice

journey also include details about the opportunities and benefits, risks, and barriers associated with justice technologies in those situations. The map of literature by targeted justice need is predominately populated with example of justice technologies around the world; in order to better assess the geographic variance of justice technologies, a secondary category of geographic region is used to organize the literature. justice need is predominately populated with example of justice technologies around the world; in order to better assess the geographic variance of justice technologies, a secondary category of geographic region is used to organize the literature.

c. Limitations

Language

The research was exclusively conducted in English.

Geography

Efforts were made to compile a literature review that is representative of the global community, and the research discussed here represents what has been identified after a thorough search. However, many of the sources come from—or are written about—the United States, Canada, and Western European countries. While resources both from and about other regions, including Latin America, Africa, Asia, Eastern Europe, and the Middle East, were sought out, this review could be enriched with additional sources from these regions.

Point of view

This literature review is developed with an orientation towards public policymaking. While private sector, multilateral, and non-governmental actors were included, they may be underrepresented. Relatedly, the primary focus is on the national level; therefore, sub-national and community-oriented perspectives may be underrepresented.

Total Number of Sources

In total, 119 sources were reviewed.

4 Literature Review Findings

a. ICT Interventions to Improve Access to Justice

ICTs as Tools to Facilitate Access to Justice

Actors working to advance access to justice can utilize numerous tools to accomplish their goals, and ICTs are becoming increasingly common. While ICTs alone are not solutions to the global access to justice crisis, they can be powerful components of policies and interventions targeting unmet justice needs. This section discusses the justice technology landscape and explores what justice technologies are, the types of ICTs used to develop such tools, and some frameworks for organizing existing justice technologies. This information provides an important backdrop for the subsequent literature analysis.

What Are Unmet Justice Needs?

Justiciable problems become particularly problematic when they go unmet. In and of itself, a justiciable problem is not inherently bad – someone may encounter a simple justiciable problem and be able to resolve it without much trouble or sustained impact on their life. However, justice needs frequently become burdensome—both individually and societally—when they are unmet. Justice needs go unmet when "people cannot defend or enforce their rights or obtain a justice resolution of their justiciable problems."[44] Prior research from the WJP estimated that 5.1 billion people globally have unmet justice needs and fall in the justice gap. Of that, an estimated 1.5 billion people have unmet civil, administrative, or criminal justice problems.[45] These unmet problems range in severity and impact, but all are detrimental to justice and the rule of law.

What Are Justice Technologies?

A first step for understanding justice technologies is defining exactly what they consist of. The literature review identified various definitions, which are also listed in Appendix A. The specific terminology can vary, with justice technology services being identified as "justice technology," "legal technology," "e-justice," and "judicial tools." Despite the variance in terminology, the substantive meanings are generally well-aligned. Broadly speaking, justice technologies are characterized by the use of ICTs to improve justice services. McCoubrey (2022) defines e-justice as "an umbrella term that captures any effort to administer, deliver, strengthen, or monitor justice services using digital technologies."[46] Tashea (2021) offers one of the most inclusive and comprehensive definitions of justice technology:

Justice technology: "a technology or data project that is used in the administration of a justice system or service, creates access to that system or service, or increases the agency of justice system-involved people through support, like information or assistance."[47]

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[44] "Measuring the Justice Gap," 4.
[45] "Measuring the Justice Gap, 5.
[46] McCoubrey, "e-Justice: Digital transformation to close the justice gap," 9.
[47] Tashea, "Justice-as-a-Platform," 5.

Some of the literature offers narrower definitions that are limited to certain actors. For example, defining justice tech as "startups that are built with the goals of reducing inequities in criminal or civil justice and creating opportunities for justice-involved people"[48] seemingly center the private sector while excluding public policy efforts. The term "judicial tools" is limited to formal justice institutions, describing technology that addresses "the day-to-day operational needs of justices."[49] Perhaps the most narrowly defined term of the group described here, judicial tools are targeted specifically towards formal justice institutions and actors, and they explicitly "do not replace or compete with existing systems."[50]

The diversity in terminology reflects the variety of ways ICTs can be utilized in the justice system: there is a spectrum of uses, ranging from low to high levels of intervention and transformation. Any actor considering the development of a justice technology policy should begin by comprehensively defining what exactly they mean by justice technology.

What Are the Types of Justice Technology Services?

The literature identifies numerous types of justice technologies, ranging from relatively low-technology—such static websites offering basic legal information—to experiments with emerging technologies such as AI and blockchain. While multiple sources reviewed list out categories of justice technologies (e.g., Park et al. 2021; Toohey et al. 2019; Walker and Verhaert 2019), the literature seems to lack a cohesive organizational framework for these types of services.

The stages of the justice journey that informed the Global Insights on Access to Justice report can be used to organize the various types of justice technology services. Specifically, the following three stages align with elements of the justice journey: legal capability, awareness, and confidence; sources of help and advice (professional and informal); and resolution processes (through informal or formal means). Table 1 highlights some— but not all—of the examples of justice technologies identified in the literature and how they correspond to the stages of the justice journey.

[48] Katherine Hurley et al., "Justice Tech for All: How Technology Can Ethically Disrupt the US Justice System" (Village Capital, American Family Insurance Institute for Corporate and Social Impact, 2021): 4, https://assets.ctfassets.net/464qoxm6a7qi/4ZcoLJVAZX-06K8FiKe3ATt/16be02b0bb5b449e53130a320b7c0737/Justice_Tech_For_All.pdf?__hsfp=2011765936&__hssc=251652889.1.1617316907399&__hstc=251652889.46bcf037494a65bb2938a4fc25deea85.1617316907399.1617316907399.1617316907399.1/.

[49] Joint Technology Committee, "JTC Resource Bulletin: Implementing Judicial Tools" (Conference of State Court Administrators, National Association for Court Management, National Center for State Courts, 2016): 1, https://www.ncsc.org/__data/assets/pdf_file/0015/18501/-judicial-tools-ii-03-14-2016-final.pdf.

[50] Joint Technology Committee, "JTC Resource Bulletin: Implementing Judicial Tools," 1.

Table 1: Types of Justice Technologies in Relation to Stages of the Justice Journey

	Legal capability, awareness, and confidence	Sources of help and advice (professional and informal)	Resolution process (through informal or formal means)
INDIVIDUAL USE	Legal information initiatives, including guided pathways (Toohey et al. 2019, Walker and Verhaert 2019).	Chatbots (Toohey et al. 2019; Walker and Herhaert 2019)	Online dispute resolution (Park et al. 2021; Walker and Verhaert 2019).
	Self-help tools (Rostain 2019).	Lawyer marketplace (Park et al. 2021), Guided pathways to specialized legal advisors (Walker and Verhaert 2019)	Digitized court processes
	Social media tools; online learning tools (Ribadeneyra2012).	Remote legal aid (Prescott 2017)	E-filing (Harley and Said 2018; National Center for State Courts 2022).
		Unbundled services (Walker and Verhaert 2019)	
INSTITUTIONAL USE			e-discovery (Park et al. 2021).
			Document assembly (Park et al. 2021; Walker and Verhaert 2019)
	Practice management and case management (Park et al. 2021)		
	Automation platforms (Toohey et al. 2019); predictive analytics and data mining (Park et al. 2021)		

What Types of Technologies Are Delivering Justice Services?

The technology utilized to deliver the services outlined above ranges from basic websites and mobile phone applications to more innovative applications of AI and blockchain technology. Five core types of technologies are websites, SMS and USSD messaging,[51] mobile phone applications, live chat services, and chatbots.[52] While these are broad types of technologies that are utilized in a multitude of settings, they can be tailored specifically to the justice sector. For example, McGill et al. (2016) define access to justice apps as "including both mobile and web- based resources that purport to assist individuals with a specific legal task or set of tasks."[53]

AI is itself a category of technologies, including machine learning, chatbots, visual perception, optical character recognition, symbolic AI, and natural language processing.[54] Most AI-based legal

[51] Unstructured Supplementary Service Data (USSD) is "a messaging function in GSM cellphones. Unlike regular text messages, USSD messages travel over GSM signaling channels and are used to query information and trigger services with the phone carrier." Source: PC Mag, "USSD," Encyclopedia. Accessed on 9 September 2022. https://www.pcmag.com/encyclopedia/term/ussd

[52] Tom Walker and Paola Verhaert, "Technology for Legal Empowerment: A Global Review" (The Engine Room, 2019): 24, https://www.th-eengineroom.org/wp- content/uploads/2019/01/Tech-for-Legal-Empowerment-The-Engine-Room.pdf.

[53] Jena McGill et al., "Emerging Technological Solutions to Access to Justice Problems: Opportunities and Risks of Mobile and Web-Based Apps" (University of Ottowa, 2016): 9, https://commonlaw.uottawa.ca/sites/commonlaw.uottawa.ca/files/ksg_report_-_mcgill_et_al_oct_13_final_to_send_to_sshrc.pdf.

[54] Sean La Roque-Doherty, "Artificial Intelligence Has Made Great Inroads, but Hasn't yet Increased Access to Civil Justice," ABA Journal, 2021, https://www.abajournal.com/magazine/article/artificial-intelligence-has-made-great-inroadsbut-not-as-far-as-increasing-access-to-civil-justice.

tech is rooted in natural language processing and machine learning.[55] Soukupová (2021) writes that "AI-based legal tech has a great potential of structurally changing all aspects of the law- starting with legal education and ending with legal practice and judiciary."[56] AI can be particularly relevant for some types of justice technologies: Schmitz and Zeleznikow (2022) note that "rule-based reasoning, case-based reasoning, and machine learning are the essential tools for building intelligent user-centric ODR systems."[57]

Newer technologies, such as blockchain, are relatively underexplored in the justice sector. However, some existing examples provide insights into how such technologies may continue to drive change in the sector in the coming years. For example, "common use cases for blockchain in the public sector have so far addressed issues related to digital identity and certificates, personal records authentication, welfare benefits or entitlements, asset registries, and inter-or intragovernmental transactions."[58] Dhru et al. (2021) find multiple cases from low-income countries that propose the "ambitious use of technology to provide justice services" including facilitating public registration through AI and blockchain-facilitated tools.[59] Dylag and Smith (2021) discuss the promise of crypto-courts, which seek to "enable a more transparent, open, and democratic judicial system divorced from traditional state-administered courts and tribunals."[60] While such courts offer "an alternative path to justice," the relatively nascent stage of cryptocurrency demands nuanced analysis.[61]

Big data— "a phenomenon closely linked to the broader digital revolution"[62]—has been shown to offer unique insights into some of the UN Sustainable Development Goals but has not yet been well-explored in the justice sector. An assessment by Hassani et al. (2021) of existing use of big data in the development space found relatively few use cases of big data in the justice sector. Those examples that do exist are primarily focused on the topics of crime and criminal justice.[63]

There are various frameworks for organizing the types of ICTs being leveraged by justice service suppliers. The frameworks are differentiated by the characteristics used to group technologies together. For example, Tashea (2021) proposes an innovative platform approach to understanding the types of technology used to deliver justice services and their relationship to one another. This framework is organized about four layers that compose digital platforms: information, trust and consent, common technology, and services.[64] Tashea's platform approach is informed by Tim O'Reilly's work on "government-as-a-platform" – this framework can be adapted to the justice system because the justice system is a "platform between the state and its citizens," engaging in both information exchange and service provision.[65] This framework can inform understanding of how justice technology services are being delivered by facilitating the consideration of which layers are more or

[55] Jana Soukupová, "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, no. 2 (September 30, 2021): 290, https://doi.org/10.5817/MUJLT2021-2-6.
[56] Soukupová, "AI-Based Legal Technology," 281.
[57] Amy Schmitz and John Zeleznikow, "Intelligent Legal Tech to Empower Self-Represented Litigants," Science and Technology Law Review 23, no. 1 (March 7, 2022):151, https://doi.org/10.52214/stlr.v23i1.9391.
[58] Barbara Ubaldi et al., "State of the Art in the Use of Emerging Technologies in the Public Sector" (Paris: OECD, 2019): 4, https://www.oecd-ilibrary.org/governance/state-of-the-art-in-the-use-of-emerging-technologies-in-the-public-sector_932780bc-en.
[59] Dhru, Nikam, and Barendrecht, "Use of Digital Technologies in Judicial Reform and Access to Justice Cooperation," 4.
[60] Matthew Dylag and Harrison Smith, "From Cryptocurrencies to Cryptocourts: Blockchain and the Financialization of Dispute Resolution Platforms," Information, Communication & Society, June 23, 2021, 2, https://doi.org/10.1080/1369118X.2021.1942958.
[61] Dylag and Smith, "From Cryptocurrencies to Cryptocourts," 2.
[62]. Hossein Hassani et al., "Big Data and the United Nations Sustainable Development Goals (UN SDGs) at a Glance," Big Data and Cognitive Computing 5, no. 3 (June 28, 2021): 3, https://doi.org/10.3390/bdcc5030028.
[63] Hassani et al., "Big Data and the United Nations Sustainable Development Goals (UN SDGs) at a Glance," 18.
[64] Tashea, "Justice-as-a-platform," 6.
[65] Tashea "Justice-as-a-platform," 6.

less commonly emphasized, how the various layers of justice technology services are developed, and how services relate to one another.

Another type of framework that is identified in the literature organizes justice technologies around their relationship to the justice sector. Cordella and Contini (2020) note that ICTs "not only offer a better way to perform existing practices but also present the potential for creating new practices and fundamentally changing the way justice administrators deliver services."[66] Sourdin et al. (2020) differentiate between supportive, replacement, and disruptive technologies in their analysis of how court systems have responded to the COVID-19 pandemic.[67] Toohey et al. (2019) identify five categories of technological innovation: justice technology can be used to advance conventional service delivery, to better distribute legal information, to offer unbundled services, to automate existing tasks and processes, or in the form of chatbots or AI-driven technology.[68] These categories have some overlap with those identified in Sourdin et al. (2020).

One of the more nuanced frameworks for organizing justice tech is from Park et al. (2021), who identify eight sub- areas of legal tech: (1) lawyer marketplace; lawyer-to-lawyer outsourcing; social and referral networks; (2) document automation and assembly; (3) practice management; case management for specific practice areas; legal billing; (4) legal research; (5) predictive analytics and litigation data mining; (6) electronic discovery; (7) online dispute resolution; and (8) data security technologies.[69]

Some of the literature identifies sub-categories for specific types of justice technologies. For example, research from the Open Society Justice Initiative and the Engine Room identifies three categories around which technology for use in case management systems can be organized: organization-facing technology, client-facing technology, and institution-facing technology.[70] Wolf (2012) focuses on collaborative technologies and identifies four kinds of which can be leveraged to improve access to justice for People without Representation by Lawyers (PRLs): online dispute resolution, online document assembly services, technology for unbundled services, and adaptions of familiar technologies (e.g. videoconferencing).[71]

Benefits Are Not Without Risks or Barriers

In general, the literature identifies numerous potential benefits and opportunities that can be generated by justice technologies, including improving access to legal services,[72] reducing inequities in civil and criminal justice,[73] and adapting to shocks, such as in the case of the COVID-19 pandemic.[74] However, these potential benefits and opportunities are not without risks. While justice technologies may offer opportunities to reduce inequities, they can also exacerbate them:

[66] Cordella and Contini, "Digital Technologies for Better Justice," xii.
[67] Tania Sourdin, Bin Li, and Donna Marie McNamara, "Court Innovations and Access to Justice in Times of Crisis," Health Policy and Technology 9, no. 4 (December 2020): 449-450, https://doi.org/10.1016/j.hlpt.2020.08.020.
[68]. Lisa Toohey et al., "Meeting the Access to Civil Justice Challenge: Digital Inclusion, Algorithmic Justice, and Human-Centered Design," SSRN Electronic Journal, 2019, 140-143, https://doi.org/10.2139/ssrn.3438538.
[69]. So-Hui Park et al., "A Survey of Research on Data Analytics-Based Legal Tech," Sustainability 13, no. 14 (July 20, 2021): 8085, https://-doi.org/10.3390/su13148085.
[70] "Technology in Case Management for Legal Empowerment Work" (Open Society Justice Initiative, The Engine Room, 2018): 2, https://www.theengineroom.org/wp- content/uploads/2018/04/Technology-in-Case-Management-for-Legal-Empowerment-The-Engine-Room.pdf.
[71] Michael J. Wolf, "Collaborative Technology Improves Access to Justice," New York University Journal of Legislation and Public Policy 15 (2012): 773-785.
[72] Wolf, "Collaborative Technology Improves Access to Justice," 72.
[73] Hurley et al., "Justice Tech for All: How Technology Can Ethically Disrupt the US Justice System," 4.
[74] Marco Fabri, "Will COVID-19 Accelerate Implementation of ICT in Courts?," International Journal for Court Administration 12, no. 2 (May 6, 2021): 2, https://doi.org/10.36745/ijca.384.

"the complexity and inaccessibility of legal system can intersect with conditions of digital exclusion to exacerbate these inequities in access to justice."[75] Concerns about "the use of data, privacy, digital intellectual property, security, and human rights and ethics compliance in digital settings" are not insignificant.[76] Beyond the potential risks associated with justice technologies and digitalization, there are also some concerns that the integration of court systems, private enterprises, and other "mega systems" may increase the chances of power imbalances, violations of confidentiality or privacy, and amplification of bad data.[77]

Barriers to effective uptake of digital technologies abound. On the logistical and operational side, digital fluency,[78] constraints on human and financial capital,[79] and the need to uphold legal validity and enforceability[80] can all impede the successful implementation of justice technology initiatives. Furthermore, broader issues of mistrust[81], political will, and regulatory environments[82] can all serve as barriers to digitalization initiatives. The COVID-19 pandemic highlighted numerous barriers to justice technology, including infrastructure, connectivity, accessibility, software and hardware, legal barriers, and resistance to change.[83]

b. Justice Technologies Are Designed to Support Specific Populations

Experiences of justice technologies vary by sub-population; for this reason, the literature is reviewed through the lens of the targeted population. The following sections consider the benefits, opportunities, risks, and barriers specific to institutional and individual actors.

Institutional

From the institutional side of the justice system, there are a plethora of ways in which existing justice systems and services can be improved. The OECD notes that generally digital governance initiatives provide "the opportunity to foster openness, transparency and inclusiveness."[84] Private sector entities—including lawyers, law firms, and civil society actors—can stand to garner various benefits and opportunities from leveraging justice technology. Lawyers can leverage technology to better connect with consumers,[85] to serve clients more directly,[86] and to work more efficiently.[87] Justice technologies such as Paladin offer law firms, bar associations, and legal services organizations the opportunity to "streamline and scale their pro bono programs, serve more low-income individuals and capture impact data."[88] While motivations for engaging justice technologies may vary by context, operational improvements are a common reason

[75] Kate M. Murray, "Digital Equity in Access to Justice: Literature Review-Summary Report" (LegalAid BC, 2021): 64, https://legalaid.bc.-ca/sites/default/files/2021- 11/Murray-2021-LABC-ADE-Literature-Review-Summary-Report.pdf.
[76] Jane Donoghue, "The Rise of Digital Justice: Courtroom Technology, Public Participation and Access to Justice: The Rise of Digital Justice," The Modern Law Review 80, no. 6 (November 2017): 996, https://doi.org/10.1111/1468-2230.12300.
[77] Leah Wing, Janet Martinez, Ethan Katsh, and Colin Rule, "Designing Ethical Online Dispute Resolution System: The Rise of the Fourth Party," Negotiation Journal 37, no. 1 (January 2021): 13 http://newhandshake.org/pepperdine/negjo.pdf ,https://doi.org/10.1111/nejo.12350.
[78] Ray Brescia, "Using Technology to Improve Rural Access to Justice," Government, Law and Policy Journal 17, no. 1 (2018): 62.
[79] Probir Banerjee and Patrick Y.K. Chau, "An Evaluative Framework for Analysing E-Government Convergence Capability in Developing Countries," Electronic Government, an International Journal 1, no. 1 (2004): 37-38, https://doi.org/10.1504/EG.2004.004135.
[80] Emily S. Taylor Poppe, "The Future Is Complicated: AI, Apps & Access to Justice," Oklahoma Law Review 72, no. 1 (2019): 191.
[81] National Center for State Courts 2022, 8.
[82] Poppe, "The Future Is Complicated: AI, Apps & Access to Justice" 191.
[83] McCoubrey, "e-Justice: Digital transformation to close the justice gap," 9.
[84] "OECD Digital Government Toolkit - 12 Principles," OECD, 2020, https://www.oecd.org/governance/digital-government/toolkit/.
[85] Hurley et al., "Justice Tech for All: How Technology Can Ethically Disrupt the US Justice System," 22.
[86] Brescia, "Using Technology to Improve Rural Access to Justice," 60.
[87] Brescia, "Using Technology to Improve Rural Access to Justice," 59.
[88] Hurley et al., "Justice Tech for All: How Technology Can Ethically Disrupt the US Justice System," 23.

for justice technology uptake. A survey of law firms in the United Kingdom found that the most common goals informing the uptake of legal technology include improving service quality, workflow efficiency and flexibility, cost effectivenes increased security.[89]

The public sector can also benefit from justice technology. As technology has developed in recent decades, it has become more affordable and, therefore, more accessible for public actors such as courts.[90] While there are many examples of justice technology uptake in the public sector, overall, there is still a lot of room for improvement. Per Hartung et al. (2022), "courts try to manage 21st-century complexity with 19th-century tools such as paper file keeping. As a result, insufficient digitalization leads to a bad user experience and eroding trust in our legal institutions...Justice system, intended to satisfy both those seeking and administering justice, instead leave each group dissatisfied."[91]

Potential benefits to be enjoyed by the judiciary when leveraging technology include improved efficacy and transparency, as well as standardization of processes.[92] New and emerging technologies such as AI and blockchain "hold considerable potential for making the public sector smarter, i.e. more agile, efficient, user-friendly, and as a result, more trustworthy."[93] There is potential for justice technology services to support progress on access to justice: "the use of technology by government agencies, courts and tribunals can potentially reduce the cost of providing existing labour-intensive services, and allow savings to be diverted to provision of additional services to fill the access to justice gap. This increase in access to justice through technological efficiencies can be expected to grow significantly."[94] Initiatives such as online dispute resolution can streamline service provision by limiting the number of people who need to utilize the formal justice system to resolve their problems.[95] At the global level, justice technology services can improve international justice cooperation by facilitating cross-border interactions and the navigation of international disputes.[96]

The Supreme Court of Korea's e-Court initiative is an example of a public institution continuing to evolve and scale up their justice technology efforts. This initiative began in 1979 with a feasibility study, and the case management system was completed in 2002. Since then, the system has continued to scale up and in 2007 the Judge's Unified System for Intelligence Case Management was established. This system allows for trials to be scheduled, cases to be managed, and decisions to be written electronically. Now, the electronic filing system can be used to resolve a variety of legal cases including those related to property, insolvency, family, property, and injunction.[97]

ICTs can facilitate adaptation of justice systems to crises. The COVID-19 pandemic is one example of a situation in which ICTs have been utilized to improve and adapt existing operations to rapidly changing environments. The COVID-19 pandemic has further fueled the technological revolution in the justice system. Justice technology services can ensure continuity of services amid extreme circumstances, such

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[89] Mari Sako and Richard Parnham, "Technology and Innovation in Legal Services: Final Report for the Solicitors Regulation Authority" (University of Oxford, 2021): 6, https://www.sra.org.uk/globalassets/documents/sra/research/-full-report-technology-and-innovation-in-legal-services.pdf?version=4a1bfe.

[90] Donoghue, "The Rise of Digital Justice," 999.

[91] Dirk Hartung et al., "The Future of Digital Justice" (Boston Consulting Group, Bucerius Law School, and Legal Tech, 2022): 4, https://web-assets.bcg.com/3a/4a/66275bf64d92b78b8fabeb3fe705/22 -05-31-the-future-of-digital-justice-bls-bcg-web.pdf.

[92] Fabri, "Will COVID-19 Accelerate Implementation of ICT in Courts?" 2.

[93] Ubaldi et al., "State of the Art in the Use of Emerging Technologies in the Public Sector," 3.

[94] Toohey et al., "Meeting the Access to Civil Justice Challenge," 143.

[95] Julianne Dardanes, "When Accessing Justice Requires Absence from the Courthouse: Utah's Online Dispute Resolution Program and the Impact It Will Have on Pro Se Litigants," Pepperdine Dispute Resolution Law Journal 21, no. 1 (2021): 146-147.

[96] Anjanette H. Raymond and Scott J. Shackelford, "Technology, Ethics, and Access to Justice: Should an Algorithm Be Deciding Your Case," Michigan Journal of International Law 35, no. 3 (2014): 511.

[97] "E-Court System: History," Supreme Court of Korea. Accessed 3 October 2022. https://eng.scourt.go.kr/eng/judiciary/eCourt/history.jsp

as the COVID-19 pandemic. This is particularly true for continuing processes related to extreme cases.[98] Research from the OECD and the Law and Justice Foundation of New South Wales compiles numerous examples of national responses to the COVID-19 pandemic. For example, Chile and Malaysia worked to continue public access to hearings by offering public livestreams of hearings, while Ireland has started videoconferencing detained persons into hearings.[99]

Justice technology is not without risks to institutional justice actors. A key concern is balancing ambition with feasibility as projects that are too ambitious may fail to achieve their goals. One example of this is a project in Italy that was ultimately scaled back and redesigned after it tried to meet too many demands and became overwhelmingly complex.[100] Another concern for lawyers is that some technologies may impede their ability to work. Research found that "videoconferencing can also affect the ability of defense council to provide effective representation."[101] Public sector actors have to navigate concerns pertaining to upholding defendant rights, ensuring procedural justice,[102] and respecting public participation.[103] Risks are so serious that they may include "impinging on the judiciary's basic and fundamental values in a democratic context, such as access to justice, independent and impartiality of judges, fair trial in reasonable time, [and] quality of judgements."[104] The use of AI in the public sector generates particular risks, including the potential erosion of trust in the court system[105] and threats to privacy, security, and fairness.[106]

Individuals or Groups Within the Community Served

A people-centered approach to justice demands that the pros and cons of justice technology are considered not only from the point of view of justice institutions, but also from that of individuals. Justice technologies offer various benefits to users, including access to legal information[107] and access to un-bundled legal services[108]. Tools such as online form competition can decrease the amount of paperwork involved in resolving an issue,[109] while virtual court proceedings can help mitigate the economic, physical, and psychological costs associated with in- person court proceedings.[110] Justice technologies such as online dispute resolution can improve access to justice by generating "more satisfactory outcomes for litigants."[111]

Pro se litigants are among the most commonly identified potential beneficiaries of justice technology. In the United States, the number of pro se litigants has "skyrocketed" in recent years, the result of the high cost of legal services and a cultural emphasis on self-reliance.[112] Various types of justice

[98] Sourdin, Li, and McNamara, "Court Innovations and Access to Justice in Times of Crisis," 448-450.
[99] "Access to Justice and the COVID-19 Pandemic: Compendium of Country Practices" (Paris: OECD, Law and Justice Foundation, September 25, 2020): 3, https://www.oecd.org/governance/global-roundtables-access-to-justice/access-to-justice-compendium-of-country-practices.pdf.
[100] Giampiero Lupo and Jane Bailey, "Designing and Implementing E-Justice Systems: Some Lessons Learned from EU and Canadian Examples," Laws 3, no. 2 (June 24, 2014): 359, https://doi.org/10.3390/laws3020353.
[101] Jenia I. Turner, "Remote Criminal Justice," Texas Tech Law Review 53 (2021): 205.
[102] Donoghue, "The Rise of Digital Justice," 997.
[103] Donoghue, "The Rise of Digital Justice," 998.
[104] Fabri, "Will COVID-19 Accelerate Implementation of ICT in Courts?" 2.
[105] Wing, Martinez, Katsh, and Rule, "Designing Ethical Online Dispute Resolution Systems," 12-13.
[106] Ubaldi et al., "State of the Art in the Use of Emerging Technologies in the Public Sector," 56.
[107] Rebecca Sandefur, "Legal Tech for Non-Lawyers: Report of the Survey of US Legal Technologies" (Chicago: American Bar Foundation, 2019): 4, https://www.americanbarfoundation.org/publications/6243.
[108] Toohey et al., "Meeting the Access to Civil Justice Challenge," 142.
[109] J.J. Prescott, "Improving Access to Justice in State Courts with Platform Technology," Vanderbilt Law Review 70 (2017): 1993–2050.
[110] Prescott, "Improving Access to Justice in State Courts Using Platform Technology," 2005-2008.
[111] Amanda R. Witwer et al., "Online Dispute Resolution: Perspectives to Support Successful Implementation and Outcomes in Court Proceedings" (RAND Corporation, RTI International, University of Denver, Police Executive Research Forum, 2021): 2, https://www.rand.org/-pubs/research_reports/RRA108-9.html.
[112] Dardanes, "When Accessing Justice Requires Absence from the Courthouse: Utah's Online Dispute Resolution Program and the Impact It Will Have on Pro Se Litigants," 144.

technologies—including online dispute resolution, unbundled services, and digital document completion—can support pro se litigants.[113] Wolf (2012) notes that collaborative justice technologies "should be used to help offset the unmet need for traditional legal services by allowing PRLs [People without Representation by Lawyers] to resolve disputes in a variety of ways that may be more appropriate than litigation, to reduce PRLs legal knowledge deficit when they do interact with the court system, and to make traditional legal and ADR services more accessible and affordably by lowering transaction costs and increasing efficiency."[114] From the onset of a justice problem, "the use of technology can be of great assistant in providing outreach, information, and support to self-represented litigants, specifically those who are navigating the justice system for the first time."[115]

Online dispute resolution in particular is highlighted as a tool that can allow people to resolve their legal problems easier and faster,[116] and overall expand access to remedies for pro se litigants "who cannot afford the time and costs of in-person processes."[117] Online dispute resolution tools target the later stages of the justice journey, specifically resolution processes. Utah's online dispute resolution system is an example of how to advance justice by alleviating challenges faced by pro se litigants and clearing up backlogs in court dockets.[118] It also succeeded in decreasing the average time to disposition across all types of dispositions.[119] In Michigan, using "Matterhorn" enabled users of the justice system to solve disputes more quickly, a decreased rate of default, constructively engaged individuals and the court system, and lessened congestion in the court.[120]

Rural populations can uniquely benefit from justice technologies as they can support inclusion and facilitate participation in the justice sector[121] while also improving access to information and services that may otherwise be inaccessible.[122] While rural populations are largely "underserved" by the justice system, technology can enable access to court files and allow individuals the ability to pay fines and file documents remotely.[123] For rural residents who have to participate in court proceedings, remote participation via videoconferencing or other similar platforms can make it possible to participate "without incurring the cost of traveling to the courthouse."[124] However, the effective use of justice technologies by rural populations depends on the availability of requisite infrastructure and digital literacy. The challenges of the digital divide are further discussed in the subsequent paragraphs.

Vulnerable and marginalized populations can also stand to benefit from justice technology. One such example of this is e-reporting, which can facilitate friendlier environments for vulnerable individuals.[125] For low-income individuals, legal technology can make legal information more accessible. A key barrier

[113] Wolf, "Collaborative Technology Improves Access to Justice," 773-785.
[114] Wolf, "Collaborative Technology Improves Access to Justice," 72.
[115] Bonnie Rose Hough, "Let's Not Make It Worse: Issues to Consider in Adopting New Technology," Harvard Journal of Law & Technology 26, no.1(2012): 258.
[116] Dardanes, "When Accessing Justice Requires Absence from the Courthouse: Utah's Online Dispute Resolution Program and the Impact it Will Have on Pro Se Litigants," 146-147.
[117] Amy J. Schmitz, "Measuring 'Access to Justice' in the Rush to Digitize," Fordham Law Review 88 (2020): 2384.
[118] Dardanes, "When Accessing Justice Requires Absence from the Courthouse: Utah's Online Dispute Resolution Program and the Impact it Will Have on Pro Se Litigants," 143.
[119] Lyle Moran, "Online Dispute Resolution Promises to Increase Access to Justice, but Challenges Remain," ABA Journal, 2021, https://www.abajournal.com/magazine/article/online-dispute-resolution-promises-to-increase-access-to-justice-but-challenges-remain.
[120] Prescott, "Improving Access to Justice in State Courts Using Platform Technology," 1993-1994.
[121] Brescia, "Using Technology to Improve Rural Access to Justice," 59-60;. Siân Herbert, "Improving Access to Justice through Information and Communication Technologies" (Governance and Social Development Resource Centre (GSDRC), 2015): 2-3, https://gsdrc.org/publications/-improving-access-to-justice-through- information-and-communication-technologies/.
[122] Brescia, "Using Technology to Improve Rural Access to Justice," 60.
[123] Hough, "Let's Not Make It Worse: Issues to Consider in Adopting New Technology," 261.
[124] Hough, "Let's Not Make It Worse: Issues to Consider in Adopting New Technology," 262.
[125] Georgia Harley and Agnes Said, "E-Justice: Does Electronic Court Reporting Improve Court Performance?," 2018, https://blogs.worldbank.org/europeandcentralasia/e-justice-does-electronic-court-reporting-improve-court-performance.

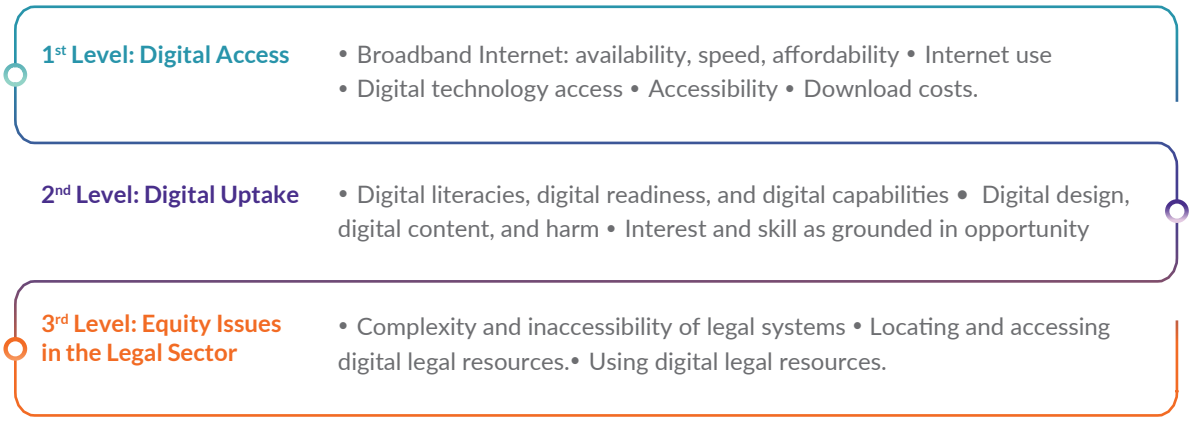
for low-income individuals trying to access justice is "long queues on legal aid telephone hotlines,"[126] as they may have time and resource constraints. Providing legal information via SMS messaging is one potential solution to this problem.[127] One example of this in the United States is the ABA Free Legal Answers Online, which "affords low-income Americans an avenue to request legal advice and counsel on civil legal issues from a volunteer attorney in their state."[128]

Technology can facilitate access to justice for people with disabilities. For example, e-reporting can improve accessibility for deaf people, [129] while screen readers can facilitate access for people with visual impairments and videoconferencing can be used to incorporate sign-language interpreters.[130] People with motor or cognitive disabilities can benefit from online dispute resolution, which can offer more flexible timeframes as needed.[131]

While individuals have a lot to potentially gain from justice technology, those benefits are not without significant risks. Research finds that justice technology can truly be a double-edged sword: while technology can be used to close justice gaps and decrease inequities in some cases, they can amplify those issues in other cases. Many justice technologies require specific skills and resources to use them,[132] such as digital literacy and access to the internet. Murray's (2021) review of literature on digital equity on British Columbia, Canada, highlights the multi-faceted nature of the digital divide. While the digital divide may just be thought of as a binary question—does someone have access to the internet or not?—in reality, it is more nuanced than that. Murray (2021) leverages the framework of the first, second, and third-level digital divides wherein the first-level is about availability, affordability, and speed of the internet; the second level divide is about ensuring use and uptake of digital technologies; and the third-level divide relates to the inequities pervasive in the legal sector. (See Figure 2).

Figure 2: The First, Second, and Third-Level Digital Divides

Murray (2021) discusses the three levels of the digital divide and their relationship to justice technology.[133]



When justice technologies exist, the first, second, and third-level digital divides can prevent people

[126] Abhijeet Chavan, "Mobile Strategies for Legal Services," Harvard Journal of Law & Technology 26, no. 1 (2012): 275.
[127] Chavan, "Mobile Strategies for Legal Services," 275.
[128] Kathleen Elliott Vinson and Samantha A. Moppett, "Digital Pro Bono: Leveraging Technology to Provide Access to Justice," St. John's Law Review 92 (2018): 559.
[129] Harley and Said, "E-Justice: does electronic court reporting improve court performance?"
[130] Hough, "Let's Not Make It Worse: Issues to Consider in Adopting New Technology," 262.
[131] David Larson, "Access to Justice for Persons with Disabilities: An Emerging Strategy," Laws 3, no. 2 (May 27, 2014): 226, https://-doi.org/10.3390/laws3020220.
[132] Sandefur, "Legal Tech for Non-Lawyers: Report of the Survey of US Legal Technologies," 11.
[133] Murray, "Digital Equity in Access to Justice: Literature Review-Summary Report," 10-73.

from utilizing them.[134] For example, "...those writing about access to justice have highlighted that seniors, people with less formal education, Indigenous and non-Indigenous residents of rural and remote communities, and those without home internet disproportionately face barriers to locating legal help online."[135] Furthermore, Murray (2021) goes on to note that people with physical and intellectual disabilities, as well as individuals with mental health concerns, may experience intersecting barriers to access to justice that exacerbate their exclusion and inability to effectively use and benefit from justice technologies.[136] When algorithms are involved, data limitations—including the use of incomplete or inaccurate data—can "escalate the negative impact."[137] This can result in heightened risks of compounding and perpetuating existing inequities.[138] Furthermore, personal circumstances may serve as impediments to justice technology update. For example, individuals may also be discouraged from engaging with justice technologies as a result of stress and trauma,[139] or due to the emotional challenges related to reckoning withchallenging personal topics.[140]

c. Justice Technologies Can Target Specific Legal Needs

In evaluating examples of justice technologies, some categories of justiciable problems are more commonly covered than others. Some of the most popular legal needs addressed by justice technologies include family, housing, money & debt, consumer, and broader criminal justice issues.

One of the most common types of legal technologies, online dispute resolution, originated in response to consumer disputes. One of the first online dispute resolution systems was developed by eBay. Tiamiyu (2022) notes that "from the very beginning, ODR was about more than merely resolving disputes—ODR also focused on developing systems to promote clarity and to prevent the likelihood that a dispute would occur."[141] It is unsurprising that consumer-related legal issues remain among the most commonly targeted legal needs. Poppe (2020) notes that "consumer-focused areas of law" are particularly "ripe for disruption by legal technology."[142] Tiamiyu (2022) identifies three branches of online dispute resolution: AI-based online dispute resolution, blockchain-based online dispute resolution, and facilitative online dispute resolution. Examples of justice technologies seeking to resolve consumer-related justice problems include DoNotPay in the United States, which can assist in the resolution of small claims issues.[143] In Mexico, Concilianet seeks to "resolve disputes between registered merchants and their customers."[144] The Online Mediation Center in India is another example of technology being used to resolve consumer disputes,[145] while Sauti East Africa supports womenworking in commerce by providing legal services via SMS and WhatsApp.[146]

Tools for navigating separation, divorce, and death are common examples of justice technologies

[134] Murray, "Digital Equity in Access to Justice: Literature Review-Summary Report," 5.
[135] Murray, "Digital Equity in Access to Justice: Literature Review-Summary Report," 65.
[136] Murray, "Digital Equity in Access to Justice: Literature Review-Summary Report," 79.
[137] Leah Wing, "Artificial Intelligence and Online Resolution Systems Design: Lack of/Access to Justice Magnified," International Journal on Online Dispute Resolution 4, no. 2 (2017): 18.
[138] Yulia Razmetaeva and Sergiy Razmetaev, "Justice in the Digital Age: Technological Solutions, Hidden Threats and Enticing Opportunities," Access to Justice in Eastern Europe 4, no. 2 (May 2021): 114, https://doi.org/10.33327/AJEE-18-4.2.
[139] Murray, "Digital Equity in Access to Justice: Literature Review-Summary Report," 70.
[140] Poppe, "The Future Is Complicated: AI, Apps & Access to Justice," 201-203.
[141] Oladeji Tiamiyu, "The Impending Battle for the Soul of Online Dispute Resolution," Cardozo Journal of Conflict Resolution 21 (2021): 81, https://ssrn.com/abstract=3934543.
[142] Poppe, "The Future Is Complicated: AI, Apps & Access to Justice," 186.
[143] Walker and Verhaert, "Technology for Legal Empowerment: A Global Review," 22.
[144] Raymond and Shackelford, "Technology, Ethics, and Access to Justice: Should an Algorithm Be Deciding Your Case," 504.
[145] Walker and Verhaert, "Technology for Legal Empowerment: A Global Review," 78.
[146] Tashea, "Justice-as-a-platform,", 15.

to address family-related legal needs. As Tiamiyu (2022) notes, justice technologies, specifically online dispute resolution, can be particularly well-aligned with resolving family disputes because they are often "pre-existing, emotionally-driven disputes that benefit from technology's intervention to reduce the likelihood of escalated tension."[147] Some examples of these justice technologies include OurFamilyWizard,[148] Amicable,[149] the former Rechtwijzer initiative, and its successor Uitelkaar,[150] which all seek to support families navigating separation and divorce. DilseWill and Will Star are both Indian justice technologies that allow users to create a will.[151] These tools can help families handle challenging conversations and establish agreements about dividing assets, managing custody arrangements, or estate planning. Evidence suggests such tools are effective. For example, the Rechtwijzer initiative in the Netherlands was an online dispute resolution platform specifically for couples navigating divorce and separation. An evaluation of Rechtwijzer found that overall, users had a positive experience using the platform and were likely to recommend it to others.[152]

Another type of justice problem commonly targeted by legal technology is housing-related issues. Justice technologies such as Dear Landlord in Australia,[153] HeatSeek and JustFix in the United States,[154] and LawPadi in Nigeria[155] all support tenants navigating issues related to rental properties, including disputes with their landlords. On the institutional side, Prometea in Argentina is a tool developed by the Buenos Aires judiciary that leverages AI in order to resolve judicial filings. Prometea has shown to have a particularly high success rate for cases related to housing rights.[156]

d. Justice Technologies Are Leveraged at Various Stages of the Justice Journey

The supply of justice technology services is relatively diverse, ranging from relatively simple static websites to advanced applications of AI. Some services improve institutional operations; these include electronic court reporting,[157] case management, legal research, predictive analytics,[158] electronic discovery, data security,[159] and either replacement or complementary technological solutions.[160] Other examples of existing justice technology services include court and legal aid websites; interactive resources and remote assistance; document assembly; e-filing; web services; social media tools; and online learning tools.[161] Mobile technology specifically has been used to develop justice services that are delivered through text messaging, QR codes, mobile-optimized websites, and mobile self-help centers.[162] Thinking about these technologies as they align with different phases of the justice journey can be a helpful way of organizing the literature.

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[147] Tiamiyu, "The Impending Battle for the Soul of Online Dispute Resolution," 86.
[148] Tiamiyu, "The Impending Battle for the Soul of Online Dispute Resolution," 86.
[149] Walker and Verhaert, "Technology for Legal Empowerment: A Global Review," 81.
[150] Walker and Verhaert, "Technology for Legal Empowerment: A Global Review," 81.
[151] Walker and Verhaert, "Technology for Legal Empowerment: A Global Review," 78-79.
[152] Esmée A. Bickel, Marian A. J. van Dijk, and Ellen Giebels, "Online Legal Advice and Conflict Support: A Dutch Experience" (The Hague: Hague Institute for Innovation of Law (HiiL), University of Twente, 2015): 36,https://www.hiil.org/wp-content/uploads/2018/09/Online-legal-advice-and-conflict-support_UTwente.pdf.
[153] Walker and Verhaert, "Technology for Legal Empowerment: A Global Review," 80.
[154] Tashea, "Justice-as-a-platform,", 19.
[155] Tashea, "Justice-as-a-platform," 17.
[156] Ubaldi et al., "State of the Art in the Use of Emerging Technologies in the Public Sector," 43.
[157] Harley and Said, "E-Justice: does electronic court reporting improve court performance?"
[158] Ana Laura Lira Cortes and Carlos Fuentes Silva, "Artificial Intelligence Models for Crime Prediction in Urban Spaces," Machine Learning and Applications: An International Journal 8, no. 1 (March 31, 2021): 7-8, https://doi.org/10.5121/mlaij.2021.8101.; Ric Simmons, "Big Data, Machine Judges, and the Legitimacy of the Criminal Justice System," University of California Davis Law Review 52 (2018): 1067–1118.; and. Park et al., "A Survey of Research on Data Analytics-Based Legal Tech."
[159] Park et al., "A Survey of Research on Data Analytics-Based Legal Tech," 8086.
[160] Razmetaeva and Razmetaev, "Justice in the Digital Age: Technological Solutions, Hidden Threats and Enticing Opportunities," 108.
[161] Jane Ribadeneyra, "Web-Based Legal Services Delivery Capabilities," Harvard Journal of Law & Technology 26, no. 1 (2012): 249-255.
[162] Chavan, "Mobile Strategies for Legal Services," 269-275.

While the literature substantively discusses self-help tools, they seem to be the primary example of justice technologies aligned with legal capability, awareness, and confidence. Self-help tools can leverage technology to "enable users to address their legal issues themselves, educate them about the legal system, and motivate them to pursue their rights and see positive change."[163] Self-help tools include web-based legal information. While relatively simple and straightforward, web-based legal information can help demystify the law by offering people opportunities to educate themselves, and can enrich public confidence in the legal system.[164] A survey of justice technology in the United States found that the major of existing tools provide information to users.[165] Self-help tools are promising: "to their creators, self-help tools represent an important step toward fulfilling the democratic promise that law be accessible to everyone and redressing power imbalances in the legal system that stem from economic and other forms of inequality."[166] However, self-help tools are not the singular solution to the justice gap. As Rostain (2019) notes, "to reach people from marginalized groups, legal technologies need to be supplemented by other strategies."[167]

There are multiple applications of justice technology to provide legal help and advice. Three types of justice technologies that are aligned here are remote legal aid, online form completion, and unbundled services. These tools leverage technology to facilitate access to help—formal or informal—for people who require it. Prescott (2017) notes that remote and online legal aid is a tool through which access to justice can be improved, particularly for low-income and rural populations.[168] The literature identifies various examples of online legal aid offered via social media. The Ateneo Human Rights Center in the Philippines and Kituo Cha Sheria in Kenya both offer free legal assistance via platforms including Facebook.[169]

Online form completion is another application of technology to this component of the justice journey. Online form completion can improve access to justice by decreasing the amount of paperwork involved,[170] which can have cascading benefits by allowing justice actors to "focus on more significant matters, such as educating litigants, answering questions, and assisting in the preparation of litigant documents."[171]

The literature discusses various ways in which legal technology can be leveraged during the resolution process element of the justice journey. Online dispute resolution, digitized court processes, e-reporting and e-filing, and case management are all examples of how justice technology can contribute to the resolution of justice problems. Digitized court processes, e-reporting and e-filing, and case management are primarily oriented towards the justice institutions, but the benefits generated by them are often at least partially passed on to individuals. Online dispute resolution, on the other hand, is primarily oriented towards individuals. Online dispute resolution "can resolve cases before they make it to courts, decreasing backlogs for judges."[172]

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[163] Tanina Rostain, "Techno-Optimism & Access to the Legal System," Daedalus 148, no. 1 (January 2019): 93, https://doi.org/10.1162/daed_a_00540.
[164] Bailey, Burkell and Reynolds, "Access to Justice for All," 195-196.
[165] Sandefur, "Legal Tech for Non-Lawyers: Report of the Survey of US Legal Technologies," 8-9.
[166] Rostain, "Techno-Optimism & Access to the Legal System," 93.
[167] Rostain, "Techno-Optimism & Access to the Legal System," 95.
[168] Prescott, "Improving Access to Justice in State Courts Using Platform Technology," 2010.
[169] Andrew Valentine etal., "Providing Legal Services Remotely: A Guide to Available Technologies and Best Practices" (DLA Piper, New Perimeter, OSJI, Legal Empowerment Network, 2021): 13, https://namati.org/wp-content/uploads/2021/01/Providing-Legal-Services-Remotely_A-Guide-to-Available-Technologies-and-Best-Practices.pdf.
[170] Prescott, "Improving Access to Justice in State Courts Using Platform Technology," 2012.
[171] Hough, "Let's Not Make It Worse: Issues to Consider in Adopting New Technology," 260.
[172] Dardanes, "When Accessing Justice Requires Absence from the Courthouse: Utah's Online Dispute Resolution Program and the Impact it Will Have on Pro Se Litigants"146-147.

e. Global Variation in Justice Technology Uptake

While justice technologies are used around the world, some countries are much more advanced than others. Hartung et al. (2022) identify Austria, Canada, Singapore, and the United Kingdom as leaders in digital justice. Their relative success with digital justice is fueled by factors including the "adoption of software best practices from the private sector, early, strong, and decisive leadership, user-centricity, and openness to process optimization and data-based strategies have helped them manage the relevant changes."[173] In Canada, the Civil Resolution Tribunal is an example of how "continuous improvement, agile methods, and user-centric design" can successfully deliver justice to users.[174]

The literature identifies examples of justice technologies from around the world; however, those examples are not evenly distributed. The examples identified within the literature are disproportionately from North America, the European Union, and the European Free Trade Association (EFTA), with other regions being more sparsely covered in comparison. As illustrated in the complementary resource *Advancing Access to Justice via ICT: Literature Directory*, examples of existing justice technologies from North American and European countries were more readily available in the literature, while examples from other regions—such as the Middle East and North Africa— were somewhat more difficult to come by. This may be the consequence of two factors: first, as noted earlier in this literature review, research was conducted exclusively in English. Thus, this likely results in a bit of selection bias with regard to the regions that are well-represented versus those which are not. Secondly, a country's level of economic development may inform the robustness of the justice technology space. Research from Dhru et al. (2021) analyzed examples of justice technologies from around the world and found that while examples exist across the economic spectrum, the few examples of successful justice technologies tend to be from high income countries.[175] Furthermore, the justice technology funding ecosystem is nascent and most of the private investors identified by Dhru et al. (2021) "have supported innovations in high income countries."[176]

While examples of justice technologies may be more readily available from North American and European countries, there are examples of justice innovations from around the world. One of the most comprehensive global compilations of existing justice technologies is the UNDP's e-Justice Projects Global Map. This resource includes more than 150 examples from around the world. The list of justice technologies can be filtered by the type of project (e.g., virtual hearing, digital records, blockchain, case management, etc.) and the primary objective of the initiative (e.g., access to justice, anti-corruption, COVID-19 adaptation, and more).[177] Some of the examples identified in the UNDP's mapping effort include digital legal assistance in Laos; the use of online forms for small claims courts in Benin; an online court system in Singapore; and electronic litigation in Bahrain.[178] Sourdin et al. (2020) surveyed global court responses to the COVID-19 pandemic and identified examples from the United States, Canada, India, Qatar, the United Arab Emirates, Australia, New Zealand, Uganda, South Africa, the UK, Italy, Ireland, Hungary, and China.[179]

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[173] Hartung et al.,"The Future of Digital Justice," 2.
[174] Hartung et al.,, "The Future of Digital Justice," 13.
[175] Dhru, Nikam, and Barendrecht, "Use of Digital Technologies in Judicial Reform and Access to Justice Cooperation," 4.
[176] Dhru, Nikam, and Barendrecht, "Use of Digital Technologies in Judicial Reform and Access to Justice Cooperation," 51.
[177] "UNDP e-Justice Projects Global Map," United Nations Development Programme, 30 May 2022. Accessed 3 October 2022. https://public.tableau.com/app/profile/undp.ejustice/viz/UNDPGlobalMapofe-JusticeProjects/UNDPe-JusticeProjectsGlobalMap
[178] "UNDP e-Justice Projects Global Map," 2022.
[179] Sourdin, Li, and McNamara, "Court Innovations and Access to Justice In Times of Crisis," 449-450.

5 Enabling Systemic and Environmental Factors

Even if justice technologies are perfectly designed to target the intended population and meet their specific legal needs throughout the justice journey, a variety of enabling factors are necessary for such technologies to meet their intended goals. As Hartung et al. (2022) note, "a successful digital transformation of the justice system does not merely require the right set of technologies; it need extensive change management and coordinate legislative reform."[180] While the particular relevance of many of these enabling factors will be context specific, some common trends emerge in the literature. Discussed in this section are the digital divide, the implementation process, political will, regulation, and learning cycles.

a. The Digital Divide

The digital divide is a critical factor influencing the overall success of a justice technology. While digitalization has progressed significantly in the 21st century, many people and communities continue to experience significant barriers to accessing and utilizing digital services. As discussed earlier, Murray (2021)'s analysis highlights the three levels of the digital divide. Overcoming the digital divide in order to effectively leverage justice technologies is more complicated than just ensuring people have access to the internet. Beyond access to the internet and other digital tools, people need to feel comfortable using them, particularly for legal matters.[181] Creutzfeldt (2021) echoes this sentiment, highlighting that "people's abilities to engage with online justice services depends on both their legal and digital capabilities."[182]

When unaddressed, the digital divide can exacerbate existing justice gaps. There is frequent overlap between individuals who are in the digital divide and those who are in the justice gap. Denvir and Selvarajah (2021) found that in England and Wales, sub-groups of the population who are vulnerable to experiencing justiciable problems are also less likely to have access to the internet, thus impeding their ability to utilize digital justice services.[183] While justice technologies can offer opportunities for people to be lifted up out of the justice gap by providing access to justice, the interference of the digital divide can leave some populations even further behind. Brescia (2018) identifies the digital divide as a challenge that may impede the successful roll-out of justice technologies in rural areas.[184] Research from the National Center for State Courts (2022) noted that people who do not have access to online banking systems may be excluded from digitized justice systems that require online payment.[185]

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[180] Hartung et al., "The Future of Digital Justice," 5.
[181] Murray, "Digital Equity in Access to Justice: Literature Review-Summary Report," 10-73.
[182] Naomi Creutzfeldt, "Towards a Digital Legal Consciousness?," European Journal of Law and Technology, 2021: 2, https://ssrn.com/abstract=4001546.
[183] Catrina Denvir and Amanda Darshini Selvarajah, "Safeguarding Access to Justice in the Age of the Online Court," The Modern Law Review 85, no. 1 (2021): 35, https://doi.org/10.1111/1468-2230.12670.
[184] Brescia, "Using Technology to Improve Rural Access to Justice," 61-62.
[185] "Self-Represented Efiling: Surveying the Accessible Implementations" (National Center for State Courts, 2022), https://www.ncsc.org/__-data/assets/pdf_file/0022/76432/SRL -efiling.pdf.

b. Implementation

The success of justice technology service delivery depends on implementation: the design of justice technology services is the first step, but the delivery of said services is just as important. Multiple institutions have developed principles to inform the design and delivery of justice technology services. The OECD identifies twelve principles for developing and implementing digital government strategies.[186] While these principles are defined to be more broadly applicable beyond the justice sector, the principles remain immediately relevant to justice technology implementation. Dhru et al. (2021) lay out four strategies for mobilizing digital justice tools, distilled through analysis of 150 unique justice technology innovations. The authors recommend focusing on impact and scalability, emphasizing safety and privacy, generating support and sustainability, and measuring impact through evaluation.[187]

Some literature offers tailored guidance for specific types of justice technology initiatives. Chavan (2012) highlights three factors to be considered when deploying mobile technology for justice services: content, functionality, and design.[188] Research from Russo et al. (2022) on the use of technology to support prisoner re-entry highlighted that there is a need for improved guidance for practitioners, particularly related to ensuring inclusivity in the design and implementation of such initiatives."[189] Interviews conducted by OSJI and The Engine Room (2018) identified three main factors that come into play when choosing justice technology solutions specifically for case management: "the ability of available infrastructure to support the solution in a cost-effective way; technical literacy among staff required to use the solution, and how appropriate the solution was for the particular context for which it had been chosen."[190] Bates et al. (2019) details the three stages of a court automation initiative, which could be adapted to other justice technology initiatives.[191] These stages are detailed further in Figure 3.

Figure 3: Stages of a Court Automation Initiative

Bates et al. (2019) describe three steps to a court automation initiative, each including multiple components.

[186] "OECD Digital Government Toolkit - 12 Principles."
[187] Dhru, Nikam, and Barendrecht, "Use of Digital Technologies in Judicial Reform and Access to Justice Cooperation," 5.
[188] Chavan, "Mobile Strategies for Legal Services," 275-278.
[189] Joe Russo et al., "Leveraging Technology to Support Prisoner Reentry" (RAND Corporation, RTI International, University of Denver, Police Executive Research Forum, 2022): 2, https://csa.intersearch.com.au/brushfarmjspui/bitstream/10627/1111/1/Leveraging%20Technology%20to%20support%20prisoner%20reentry.pdf.
[190] "Technology in Case Management for Legal Empowerment Work," 5.
[191] Timothy Bates, Mark Dietrich, and Nicolas Mansfield, "Designing and Implementing Court Automation Projects" (United States Agency for International Development, 2019): 5-22, https://www.usaid.gov/sites/default/files/documents/1866/USAID-CAP-Guide-FINAL.pdf.

Other organizations offer more tailored guidance. For example, the National Center for State Courts has published guidance on the use of court-technology in the context of the COVID-19 pandemic, emphasizing the user experience, the preservation of due process, the importance of flexibility and adaptation, and transparency.[192] Particular to the use of AI and predictive analytics are resources from the European Commission for the Efficiency of Justice (CEPEJ)[193] and the United States Department of Defense.[194] Table 2 compares the principles to inform the design and delivery of justice technology services, as proposed by the OECD, the CEPEJ, and the United States Department of Defense.

Table 2: Criteria on the Design and Implementation of Justice Technology Initiatives

OECD Digital Government Toolkit	Openness, transparency, and inclusiveness
	Engagement and participation in policymaking and service delivery
	Creation of a data-driven culture in the public sector
	Protecting privacy and ensuring security
	Leadership and political commitment
	Coherent uses of digital technology across policy areas
	Effective organization and governance frameworks to coordinate
	Strengthen international cooperation with governments
	Development of clear business cases
	Reinforce ICT project management capabilities
	Procurement of digital technologies
	Legal and regulatory framework
CEPEJ Ethical Charter on the use of AI in judicial systems and their environment	Respect for human rights and non-discrimination
	Quality and safety
	Transparency
	Under user control
US Department of Defense Ethical Principles for AI	Responsible
	Reliable
	Equitable
	Traceable
	Governable

Existing justice technology initiatives offer insights for future projects. A key thread woven throughout the literature is the importance of implementation. While ICT can be a tool used to advance access to justice, the outcome of a justice technology initiative depends, in part, on the ways in which it is implemented. Execution of justice technology initiatives should consider both system design and design management in order to improve efficacy.[195] The Joint Technology Committee

[192] "Guiding Principles for Post-Pandemic Court Technology" (National Center for State Courts, 2020), https://www.ncsc.org/__data/assets/pdf_file/0014/42332/Guiding-Principles-for-Court-Technology.pdf.

[193] "European Ethical Charter on the Use of Artificial Intelligence in Judicial Systems and Their Environment" (Council of Europe, 2018), https://rm.coe.int/ethical- charter-en-for-publication-4-december-2018/16808f699c.

[194] "DoD Adopts Ethical Principles for Artificial Intelligence," United States Department of Defense, February 24, 2020, https://www.defense.gov/News/Releases/Release/Article/2091996/dod -adopts-ethical-principles-for-artificial-intelligence/.

[185] Lupo and Bailey, "Designing and Implementing e-Justice Systems," 372.

(2016) recommends that the implementation of justice technology initiatives in court systems utilizes formal change management processes, monitoring and evaluation, and budget management, accompanied by changes in judicial culture.[196] Cordella and Contini (2020) suggest that justice technology efforts should consider improved data collection and information management.[197] Beyond enriching processes, the literature also points to the importance of more comprehensive cultural changes in order to facilitate justice technology uptake: the Joint Technology Committee (2016) recommends considering cultural changes within judicial systems, while Cordella and Contini (2020) point to transforming justice services and rethinking the ways in which justice authorities operate.[198]

Box 3: Resources Related to Justice Technology Implementation

- OECD Digital Government Toolkit, which houses 12 principles that support the development and implementation of digital govern ment.
- The National Center for State Courts' Guiding Principles for Post-Pandemic Court Technology (2020, 2-8).
- CEPEJ's European Ethical Charter on the Use of Artificial Intelligence in Judicial Systems and Their Environments

Learning cycles are another key part of the implementation process and will be discussed further in the subsequent section on monitoring and evaluation.

c. Political Will

Beyond the physical and logistical barriers to justice technology initiatives, political will is a significant factor influencing the impact of justice technologies. Public and private actors alike can impede justice technology initiatives if they are not on board. The literature identifies various ways that political will—or lack thereof—can influence justice technologies. Poppe (2020) notes that "ultimately, however, the disruptive power of legal technology—and its ability to increase access to justice—will not depend solely on questions of technological capacity. The regulatory and political environment will influence the role of technology in legal practice."[199] A key barrier is that "the judiciary is a traditionally monopolistic provider of justice."[200] For example, online dispute resolution may be met with opposition from the legal community.[201]

Without adequate political will, justice technologies will likely fall short of their potential. De Souza et al. (2021) suggest that justice technologies alone are not adequate for improving access to justice: "technologies, by themselves, are incapable of enforcing these rights and guarantees, requiring a social and political mobilization to take place in order to be truly effective."[202]

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[196] Joint Technology Committee, "JTC Resource Bulletin," 2.
[197] Cordella and Contini, "Digital Technologies for Better Justice," xii.
[198] Cordella and Contini, "Digital Technologies for Better Justice," xii.
[199] Poppe, "The Future Is Complicated: AI, Apps & Access to Justice," 191.
[200] Hartung et al.,, "The Future of Digital Justice," 5.
[201] Moran, "Online dispute resolution promises to increase access to justice, but challenges remain."
[202] Arlen José de Souza et al., "The Influence of New Technologies in the Realization of the Fundamental Right of Access to Justice in Brazil," *International Journal of Advanced Engineering Research and Science* 8, no. 3 (2021): 410, https://doi.org/10.22161/ijaers.83.42.

d. Regulation

Significant advances in justice technology initiatives require a healthy regulatory environment. Regulations can impede efforts to advance justice technologies in a few ways. First, the rapid evolution of technology has outpaced regulatory development, leaving governments and relevant oversight bodies without up-to-date policies and guidance. One such example of this is the issue of emerging surveillance technologies in the criminal justice space: Hollywood et al. (2018) note that "there is a lack of legal foundations and case law for emerging surveillance technologies."[203] This is a priority issue for some, and justices from the Supreme Court of the United States have stated that "emerging technologies will likely be the biggest legal challenge of the next few decades." [204] Similarly, Chesterman (2021) highlights the challenges that regulators encounter when assessing new technologies, particularly those rooted in AI: "the speed, opacity, and autonomy of AI systems do occasionally give rise to practical and conceptual difficulties for human regulators."[205]

Disconnects between regulatory and technological environments can result in skewed power dynamics that hinder justice proceedings. A common challenge highlighted in the literature is that of blackbox algorithms, or other proprietary technologies that are developed by private companies and utilized in the justice system. Efforts to protect proprietary work, such as codes, can make it challenging or outright impossible to guarantee transparency in the justice process. Regarding the use of proprietary technologies in the United States criminal justice sector, Ram (2018) flags that "at each step in the criminal justice process, defendants, their attorneys, and sometimes even the judges in whose courtrooms innocence, guilt, or imprisonment is determined operate at an informational disadvantage due to claims of corporate secrecy. These technologies pit private law assertions of secrecy against criminal justice due process norms."[206]

A second challenge related to regulation is one of legal complexity. When laws and regulations do exist to govern the use of justice technologies, they can be burdensome in regard to their complexity. Hartung et al. (2022) note that such legal complexity "results from an increasingly globalized economy in which products and services blend physical, augmented, and virtual realities. The rule requires to organize this multidimensional global marketplace form a constantly growing, ever more complex, and interlinked regulatory ecosystem."[207]

In some cases, the regulatory environment can serve as a barrier to justice technology and legal innovation. Survey research by Sako and Parnham (2021) in England and Wales identified regulatory uncertainty as one of the most significant barriers to legal technology uptake.[208] Specific issues for which there is a lack of clarity about regulatory requirements include client confidentiality, data protection, and professional insurance.[209] Lupo and Bailey (2014) highlight the negative consequences of over-regulation and legislative lags for the Italian Trial Online (TOL) initiative.[210]

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[203] John S. Hollywood et al., "Addressing Emerging Trends to Support the Future of Criminal Justice" (RAND Corporation, 2018): 11, https://www.rand.org/pubs/research_reports/RR1987.html.
[204] Hollywood et al.,, "Addressing Emerging Trends to Support the Future of Criminal Justice," 11.
[205] Simon Chesterman, "The Robot Judge Will See You Now," Simon Chesterman (blog), 2021, https://simonchesterman.com/blog/2021/07/09/robot-judge/.
[206] Natalie Ram, "Innovating Criminal Justice," Northwestern University Law Review 112, no. 4 (2018): 663.
[207] Hartung et al.,"The Future of Digital Justice," 3.
[208] Sako and Parnham, "Technology and Innovation in Legal Services: Final Report for the Solicitors Regulation Authority," 6.
[209] Sako and Parnham, "Technology and Innovation in Legal Services: Final Report for the Solicitors Regulation Authority," 7.
[210] Lupo and Bailey, "Designing and Implementing e-Justice Systems," 359.

Regulatory sandboxes are one potential pathway for improving the regulatory environment to facilitate effective justice technology development and uptake. The concept of regulatory sandboxes first emerged in the financial sector; a regulatory sandbox is a structure that allows "companies and regulators to experiment with new types of services and technologies to determine the best mode to regulate them. It is a methodological approach to potential relaxation of regulatory requirements that build in more testing and feedback through a safe innovation zone."[211] In general, the potential benefits to be generated through a regulatory sandbox include supporting public policymaking, strengthening capacity, enabling partnerships, and enriching competition.[212] In the legal sector specifically, a regulatory sandbox "would allow experimentation with new approaches involving new business models or legal technology."[213]

e. The Need for Improved Monitoring and Evaluation

Determining the impacts of justice technology services and initiatives on people-centered justice requires thorough monitoring and evaluation, which is not always common. Research from the WJP and Pathfinders (2021) recommended increased integration of monitoring and evaluation practices into justice sector initiatives in response to the reality that despite recognition of evaluation as a key tool to strengthening program design, implementation, and accountability, the justice sector lags other sectors in utilizing this tool.[214] This recommendation holds in the case of justice technology initiatives: as Dhru et al. (2021) observe, "the justice sector is unaccounted to reporting outputs and outcomes in a consistent way."[215] Within the criminal justice sector, Hollywood et al. (2018) say "there is a great deal of variation in what is being done, with little consensus on what good policing driven by analytics and data should accomplish, much less what best practices are."[216]

Research from McGill et al. (2016) on access to justice apps highlighted a number of knowledge gaps, including who is using access to justice apps, how they are being use, and what impacts are being generated.[217]

Some literature offers guidance on monitoring and evaluation of justice technology initiatives. For example, Cashman and Ginnivan (2019) recommend that the impact of justice technology services can be assessed through three principles: access to justice, open justice, and procedural fairness.[218] Miller et al. (2021) offer a framework for evaluating online dispute resolution initiatives that integrates internal and external outcomes at both micro and macro levels.[219]

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[211] Jorge Gabriel Jiménez and Margaret Hagan, "A Regulatory Sandbox for the Industry of Law" (Stanford Law School, Thomson Reuters Legal Executive Institute, 2019): 2, https://law.stanford.edu/publications/a-regulatory-sandbox-for-the-industry-of-law/.

[212] Sharmista Appaya, Helen Luskin Gradstein, and Mahjabeen Haji, "Global Experiences from Regulatory Sandboxes" (World Bank, 2020): X-XI, https://openknowledge.worldbank.org/handle/10986/34789.

[213] Jiménez and Hagan, "A Regulatory Sandbox for the Industry of Law," 3.

[214] Peter Chapman, "Grasping the Justice Gap," (Washington, DC: World Justice Project;New York: Pathfinders for Peaceful, Just and Inclusive Societies; and Paris: OECD, 2021): 16. https://worldjusticeproject.org/sites/default/files/documents/Grasping-the-Justice-Gap_Challenge-Paper_final.pdf

[215] Dhru, Nikam, and Barendrecht, "Use of Digital Technologies in Judicial Reform and Access to Justice Cooperation," 4.

[216] Hollywood et al., "Addressing Emerging Trends to Support the Future of Criminal Justice," 8.

[217] McGill et al,, "Emerging Technological Solutions to Access to Justice Problems: Opportunities and Risks of Mobile and Web-Based Apps," 4.

[218] Peter Cashman and Eliza Ginnivan, "Digital Justice: Online Resolution of Minor Civil Dispute and the Use of Digital Technology in Complex Litigation and Class Actions," Macquarie Law Journal 19 (2019): 39-79.

[219] Andrea L. Miller, Paula Hannaford-Agor, and Kathryn Genthon, "An Evaluation and Performance Measurement Framework for Online Dispute Resolution Programs: Assessing Improvements in Access to Justice" (State Justice Institute, National Center for State Courts, 2021): 2, https://www.ncsc.org/__data/assets/pdf_file/0022/65641/ODR-Evaluation-Performance-Measure-Framework.pdf.

6 Looking Ahead

a. Gaps in the Literature

While the literature review identified a rich body of existing research on justice technologies, this analysis highlights some critical gaps. These include the following:

First, a notable portion of the literature focused on the private sector is relatively limited to lawyers and law firms.

- How is justice technology leveraged by civil society organizations?
- What are the key trends, opportunities, and risks unique to these justice actors as it relates to justice technologies?

Second, the public sector at large is frequently highlighted as a type of justice institution that can benefit from justice technologies. However, there is a missing element of nuance.

- What are the varying opportunities and risks considered by public sector actors at various levels?
- Does justice technology look different for public actors at the national, sub-national, regional, and local levels? If so, how?

Third, while the literature broadly discusses the relationship between vulnerable populations and justice technology, little attention is paid specifically to women and girls, the LGBTQI+ population, and gender justice more broadly.

- What are the opportunities and risk associated with use of justice technologies by women and girls?
- How can justice technologies be leveraged to address gender justice and close the justice gap for women and girls?
- How can technology be utilized to improve access to justice for LBGTQI+ populations?

Fourth, while there is a lot of discussion of justice technologies in the North American and Western European regions, other regions of the world are underrepresented.

- What is the state of play for justice technology in other parts of the world, including Eastern Europe and Central Asia, the Middle East and North Africa, and East Asia and the Pacific?
- What factors contribute to the relative lack of regional coverage in the literature?
- Are there context-specific barriers at play that are impeding the development of justice technology in those areas?

Fifth, existing justice technologies do not seem to be equally distributed across the justice journey. Online dispute resolution seems to be one of the most popular types of technology, while the literature pays much less attention to unbundled services.

- There are many examples of justice technologies that offer access to legal information, but much less variety in the types of innovations aligned with the first phase of the justice journey (legal capability, awareness, and confidence).
- While there is a lot of discussion of AI—specifically predictive analytics—there are fewer specific examples of how this is leveraged.

Sixth, some types of legal needs seem to be ignored by justice technologies. While the literature identified numerous examples of justice technologies for certain legal needs—e.g., those related to familial issues—there is a notable lack of discussion of justice technology for health or education-related legal needs.

- Are some legal needs less suited to technological innovation, or have they been unnecessarily excluded from the discourse?

Seventh, a relative lack of monitoring and evaluation studies, impact evaluations, or experimental studies (e.g., randomized controlled trials) impedes systematic analysis of if/how justice technologies are meeting their intended goals.

- How can researchers and decision makers alike be incentivized to study the impacts of justice technologies?

Eight, data privacy is frequently highlighted as a critical risk associated with justice technology, but there is relatively little literature offering tangible guidance on how to address this, particularly in an ever-evolving digital landscape.

- How do the issues of data privacy differ across different types of justice technologies, and in different contexts?

Lastly, some of the literature highlights the use of privately-owned technologies by civil society—e.g., using Facebook chat or WhatsApp to provide legal assistance.

- What are the risks and downsides associated with this?

Justice actors who are interested in pursuing a justice technology strategy should consider all these elements in their assessment and allow it to inform their policy and program design.

b. Considerations for the Development of an Assessment Tool

The findings from the literature review can be leveraged to develop a new assessment tool to support informed decision making around justice technology initiatives, particularly by public actors. The sources reviewed and analyzed through this literature review offer valuable insights into the types of justice technologies that are available, the specific legal needs they can address and the populations they can support, and the enabling factors that influence their execution. Furthermore, the literature review pinpoints critically important information about the risks and barriers that are

associated with justice technologies; these are just as important for decisionmakers to keep in mind when evaluating a justice technology initiative.

Justice technology initiatives should be rooted in a people-centered understanding of access to justice. This is central to ensuring that a justice technology initiative fulfills the end goal of effectively advancing access to justice, rather than solely advancing technological development. An assessment tool can guide decisionmakers to take a people-centered approach by first beginning with an understanding of what people's unmet legal needs are in their specific context, and then identifying what technologies may be best suited to meeting those needs. Similarly, an assessment tool that incorporates a holistic understanding of the different stages of the justice journey can support the design and implementation of justice technologies throughout the justice experience. Another way in which an assessment tool can facilitate people-centered approaches to justice technologies is by encouraging nuanced consideration of the relevant actors, whether they are the service providers or the service users. Inclusion of these various perspectives facilitates a balanced understanding of how justice technologies may be able to support access to justice in a given context.

Enabling systemic and environmental factors must be taken into consideration when evaluating the opportunities of a justice technology. Justice initiatives do not occur in a vacuum; rather, they are also influenced by macro-level factors. These factors can vary by context, but some of the common themes identified in this literature review include the digital divide, political will, and the regulatory environment. While these factors may be beyond the scope of a specific justice intervention, they are not inconsequential. The inclusion of such factors in any assessment is important for evaluating how successful or impactful a given initiative may be. A justice technology initiative could appear to be well-designed, only to be inhibited by such factors.

Justice technology initiatives should be designed with consideration of the implementation process, including monitoring and evaluation. The literature emphasized the importance of not only designing justice technology in a people-centered manner but ensuring that it is implemented in such a way too. Monitoring and evaluation are a central component of this. Prior research from the WJP and Pathfinders has emphasized the need for improved monitoring, evaluation, and learning in the justice sector.[220] Inclusion of implementation considerations in an assessment tool can support decisionmakers in taking a well-rounded and fully informed approach to justice technology initiatives.

The identified gaps in the literature point to additional elements for consideration when designing an assessment tool. The preceding section highlights some outstanding questions regarding the use of justice technologies. These gaps are important for decisionmakers to be aware of when evaluating the use of a justice technology in their specific context. An assessment tool could incorporate questions oriented towards filling these gaps.

[220] See Peter Chapman, "Grasping the Justice Gap," (Washington, DC: World Justice Project; New York: Pathfinders for Peaceful, Just and Inclusive Societies; and Paris: OECD, 2021). https://worldjusticeproject.org/sites/default/files/documents/Grasping-the-Justice-Gap_Challenge-Paper_final.pdf

c. Conclusion

Justice actors considering the use of technologies to advance access to justice are wise to pursue a people- centered approach to doing so. As the literature cited here indicates, justice ICTs are not a panacea; in fact, ICTs can worsen access to justice in some situations. A people-centered approach is beneficial to all involved as it can facilitate the design and implementation of effective ICT-enabled programs and policies that are genuinely aligned with people's experiences. Analyzing justice technologies through the lens of people-centricity can include the consideration of specific legal needs, various justice actors and justice system users, and the different stages of the justice journey. Furthermore, a people-centered approach includes an emphasis on achieving outcomes related to advancing justice for all, rather than solely focusing on outputs such as improved efficiency.

The findings of this literature review can be leveraged to develop a new assessment tool specifically designed to support decision making around justice technologies through a people-centered approach. The WJP has pursued subsequent phases of this research, developing a tool that is informed by these findings and oriented towards supporting effective design and implementation of justice technologies.

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The World Justice Project (WJP) is an independent, multidisciplinary organization working to create knowledge, build awareness, and stimulate action to advance the rule of law worldwide. The WJP collects, organizes, and analyzes original, independent rule of law data, including the WJP Rule of Law Index; supports research and scholarship about the importance of rule of law, its relationship to development, and effective strategies to strengthen it; and connects and builds an engaged global network of policymakers and advocates to advance the rule of law through strategic partnerships, convenings, coordinated advocacy, and support for locally led initiatives. Find more information at https://worldjusticeproject.org/.

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