INTERNATIONAL COMPUTATIONAL LAW JOURNAL

CODEX SOURCE ARCHIVE

Justice-as-a-Platform

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Computational Law Report · Release 3.0 · 2021-12-07

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Volume 1 · Issue 5 · Evidence, Interpretation and Machine Judgment

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MIT Computational Law Report •

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Published on: Dec 07, 2021

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ABSTRACT

This landscape analysis is a snapshot of how technology and data are used to address the access to justice gap around the world. These innovations attempt to increase legal system efficiency, access to justice services, and the agency of civil and criminal legal system-involved people. While these projects may seem discrete or independent, they are in fact a part of a larger ecosystem of technology, data, and policy. For that reason, this report applies a novel conceptual framework and organizing metaphor: the digital platform. Doing so contextualizes each project within the justice technology ecosystem and how the project impacts end users, including citizens themselves and public employees. The report ends by discussing further areas of needed research to improve justice technology.

1.0 Introduction

Over the last decade, access to justice emerged as a global issue. Affecting 5.1 billion people worldwide, this topic transcends rich and poor countries alike. From people struggling to receive a legal wage to being evicted from their homes to facing criminal penalties, the life events that bring people to the legal system are ubiquitous. However, two-thirds of the world's population do not have access to the legal system or a legal remedy — this is the justice gap. Those stuck in this gap are disproportionately poor, minorities in their own communities, the disabled, and women. Not just a legal problem, the unmitigated justice gap limits progress that can be made on environmental, educational, healthcare, labor, and gender issues. It is also a drag on national economies.

As this problem comes into focus, momentum for greater reform and government accountability grows. At an international level, this includes Sustainable Development Goal 16.3, which promotes the rule of law and aims to ensure equal access to justice for all. Noting a general lack of reliable data on this issue, three indicators were created — two for criminal systems and one for civil systems—which are now being deployed around the globe. Following suit, the UN, the OECD, national governments, NGOs, and private industry have put increased energy behind understanding and closing the justice gap.[1]

This increased energy overlaps with a separate trend: the growing ubiquity of the internet and consumer communications technology. The convergence of these two trends led to a cohort of projects that leverage increasingly available technology, like

SMS texting, smartphones, and video conferencing, that aim to increase access to justice. Across the globe, the adoption of these types of technologies proliferated during the pandemic.

While it's possible to think that this new crop of justice technologies arose out of thin air, they are in fact the next generation of tools that are interdependent on a larger ecosystem of technology, services, data, and policy that began to appear at the beginning of the century. To provide situational awareness of these disparate projects, this report starts by defining the access to justice problem. It is followed by an introduction and explanation of the novel conceptual framework used in this report, the digital platform. Organized by the framework, the report then describes and contextualizes justice technology projects from around the world. Before concluding, the report discusses areas of further research that will impact the future of justice technology.

2.0 Defining the Access to Justice Problem

To give definition to this sprawling problem, the following section clarifies what **access to justice** and **justice technology** mean.

Access to justice should be understood broadly. To foster access to justice means building connections to the justice system's physical infrastructure, like courts and prisons; its services, like legal aid or social benefits; or a remedy, including formal and informal resolution, like mediation. This broad definition is necessary, because the size of the problem is monumental.

The scale of the access to justice gap can be measured in the number of human lives disrupted by civil and criminal problems. Regarding civil issues, like consumer debt, eviction, and child custody, slightly less than half of 100,000 people surveyed in 101 countries (49%) experienced a legal issue in the past two years. About half of those that experienced a serious legal problem (51%) did not have their justice needs met. Extrapolated across the globe, billions of people are left without the certainty or resolution provided by the civil legal system. Meanwhile, in the criminal justice system, over 11 million people are incarcerated around the world, an increase of more than 20 percent since 2000. Millions more are arrested each year or are victims of crime, illustrating the extensive reach of this system into people's lives. Impacting two-thirds of the world's population, and only exacerbated by the pandemic, the justice gap is so pervasive that neither high- nor low-income countries are immune from it.

Applying to both criminal and civil systems, there are three ways to conceptualize the access to justice gap.[2] The first and the most extreme is created by the lack of security and rule of law, which impacts 253 million people. This includes stateless or enslaved people or those living under fragile, non-functional governments. The second and largest gap is experienced by 4.5 billion people that can't prove their legal status with formal identity documents, land or housing tenure, or formal labor arrangements. The third justice gap is felt by 1.5 billion people worldwide that have a criminal or civil legal issue and do not have access to a remedy or the remedy fails the person seeking resolution.

There are many reasons why two-thirds of the world's population is unable to prove legal status or resolve a legal issue. Hurdles include the physical distance from a courthouse or lawyer, confusing process and procedure that can only be managed by a cost-prohibitive attorney, expensive filing fees or slow processing time by a court or tribunal, being excluded because of a minority status, corruption, and low-literacy in a dominant language or technology.[3]

These hurdles create harms felt at personal and societal levels. Beyond not being able to resolve a legal problem, the impacts of an unresolved legal issue can be debilitating for individuals. A global survey found that 29 percent of people reported ill health as a result of an unresolved legal issue.[4] Meanwhile, 23 percent said they lost their job or had to relocate on account of a legal problem they faced.

At the societal level, the justice gap impacts stable governance, economic development, environmental sustainability, and social harmony, by leaving people, especially those in vulnerable groups, beyond the protection of the legal system. Regarding the SDGs, the OECD named the rule of law as crucial to the implementation of SDG 1, 2, 5, 14, and 15, which means goals ranging from human rights to the environment will never flourish if access to justice flounders. The access to justice gap is also a drag on the economy. By one analysis, the justice gap costs low-income countries and OECD countries 2 and .5-3 percent of GDP every year, respectively.[5]

Faced with the massive scope of this problem, innovators in government, NGOs, and the private sector are building technologies to bridge the gap. In 2019, the Engine Room catalogued 135 access to justice technologies deployed around the globe. Researcher Rebecca Sandefur recorded over 320 digital projects aimed at self-represented litigants. JusticeTech.info indexed over 180 technology and data projects aimed at criminal justice issues between 2016 and 2019.[6] While many of these projects mentioned in these reports closed shortly after launch, others are attracting funding.

In the past decade, $77 million has been invested into more than 100 early-stage justice tech startups in the US alone, according to venture firm Village Capital. Meanwhile, The Hague Institute for Innovation of Law (HiiL) has supported more than 120 justice tech startups through its accelerator program, which includes financial and technical support.

For the sake of this report, **justice technology** refers to 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.

The vast scope of the access to justice gap has led to an extensive array of digital solutions. The next section proposes a conceptual framework to organize the work being done in the disjointed justice technology space.

3.0 The Conceptual Framework: Justice-as-a-Digital-Platform

The last half decade produced numerous justice technology catalogues and landscape reports, listing hundreds of projects.[7] While the focus of these reports were varied, they all loosely categorized the gamut of included projects. Some organized projects by type of technology, others ordered projects thematically by social problems or government bureaucracy they aimed to impact. Nothing about these approaches was wrong, especially in the justice tech space, which has little signal among the noise.

However, these approaches are limiting, because they focus on individual projects, as opposed to the larger, interdependent ecosystem of data, technology, and policy in which they exist. To contextualize the world of justice technology, this report uses the digital platform as its organizing metaphor. This novel approach not only illustrates where each project fits among other projects, it organizes them in a way that provides a prospective look of what a seamless, end-to-end digital justice system could look like. To make sense of this approach, this section first explains what a digital platform is and how it applies to the justice system. Second, it lays out how this methodology will be used in this report. Last, this section explains the benefits and limits of this approach.

In the most basic sense, a platform is an intermediary that fosters connectivity between suppliers of information, a service, or product and consumers. Examples of a platform can be analog or digital. For example, a highway or postal system are platform infrastructure that allow people and goods to move freely, connecting them to their desired end point. Meanwhile, the likes of Facebook and Twitter are prime

examples of digital platforms, which provide infrastructure for the exchange of data between advertisers, content creators, and consumers.

For many people, a digital platform is the interface they interact with online: eBay's marketplace, TikTok's video editing and publishing tools, Google's suite of services. However, just underneath the user interface is an ecosystem of software and hardware that make the user experience happen. In broad terms, the inner workings of a platform breakdown into four interdependent layers:

- The **information layer** encompasses all of a platform's structured and unstructured data, including standardization and collection processes.
- The **trust and consent layer** is the internal and external oversight mechanisms that secure data, promote privacy, and ultimately create trust between the platform and the user.
- The **common technology layer** is the digital infrastructure and processes that allow data in the first layer to be managed and manipulated. This layer includes data management processes and software, login and identification systems, payment platforms, and application programming interfaces (APIs), which allow software to interact with other software.
- The **services layer** is made up of the tools and applications that allow users and employees of the platform to interact with the services and information the platform provides.

Finding utility beyond Silicon Valley, the digital platform has been adopted and applied within government throughout the past decade. Originally popularized by Tim O'Reilly, "government-as-a-platform" is a framework to create shared, digital infrastructure so agencies across a government could decrease redundancy and provide improved access, services, and transparency. Through the development of this digital infrastructure, such as data standards, digital identification systems, and APIs, it also opens the door for civil society and the private sector to create innovative solutions to public problems. Doing so has improved access to government services and data. This approach was adopted by the Obama administration, the UK government under David Cameron, and most extensively by multiple governments of Estonia, which all developed national agencies to help modernize government.

Not limited to a specific part of government, this framework can also apply to the justice system. The justice system, in its exchange of information (i.e., laws, regulations, judgments) and services (i.e., dispute resolution, punishment, legal recognition) is also a platform between the state and its citizens. Today, however,

justice is no longer just a brick and mortar operation, and the pandemic has only hastened the digitization of justice information and services.

For this reason, the digital platform organizes this report. There is not a single justice technology project that does not fit into one of the four platform layers, making the framework inclusive. The projects organized in each of the subsequent four sections are illustrative of the breadth and depth of the work going on at each layer.

Using this framework has numerous benefits. First, it provides situational awareness to readers interested in the individual projects and contextualizes them in a software ecosystem. Second, the platform metaphor captures a broad set of projects, including court automation, open government data, and public-facing tools, which captures every type of justice technology project. Third, the platform framework as applied in this report focuses on the impact the technology has on the end user, making it people-centered. Fourth, by framing these projects as a platform it begins to show what an end-to-end digital justice system may look like from data to user. However, organizing individual projects as a digital platform does not mean that each project has, or should have, the technical ability to connect with another project. A project's inclusion in this report is not an endorsement of that project.

On balance, this approach can add to the existing landscape literature by broadening how justice technology is contextualized and discussed. The next four sections of this report illustrate each of these layers in depth.

3.1 The Information Layer: Data Standards, Collection, & Deletion

The information layer is the data produced and collected by the platform. In the case of the justice system, this layer includes data from courts, law enforcement, legal aid organizations, corrections, probation and parole, NGOs providing support to people dealing with a legal problem, and users of the system itself. Information from this layer may pertain to a case filing or case outcome, arrests information, laws and regulations, documentation proving the legal creation of a business or identity of a person, among other datasets.

Around the globe, the maturity of this layer is mixed, and those countries lagging behind on justice system data collection are worse off for it.[8] However, there are still projects inside and outside of government that are making strides to improve justice data by creating processes for administrative and survey data collection and deletion, standardizing and structuring data, and organizing it all to be useful or published.

Data collection and digitization are being undertaken by organizations for different reasons. For example, Argentina's Access to Justice Centers program created a data collection system to capture the social needs of their clients and the practical impact of the services provided by the program's centers. The data collected allows administrators to uncover under-performing offices and set up performance improvement plans. This system was cloud-based, but could work offline, where the data was uploaded once the provider was back in service.

Mexico's Secretariat of Security and Civilian Protection collects and publishes data on detained people, mostly within 48 hours of arrest. In China, the Supreme People's Court runs a central data center, which collects extensive court data to track consistency in outcomes, such as sentencing or judgments.[9] The system's functionality includes the recordings of live hearings. The data collection is done in real- or near-real-time and produces daily reports.[10]

In some instances, there are public-private arrangements that assist in the collection of justice data. In Estonia, for example, its legal aid vendor under a new contract will collect and structure legal questions from clients and relevant answers.[11] In the US, prosecutors and corrections departments at the state and local level are working with nonprofits, like Measures for Justice and Recidiviz, to collect and structure granular administrative data.

Beyond collecting new data, historic data is being digitized. The Moldovan courts digitized over 2 million cases and applied meta tags, giving structure to the data.[12] Similarly, courts in China, Kyrgyzstan, and South Western Nigeria have worked to digitize some or all of their older, paper case files.

Beyond administrative data, which has traditionally been used to monitor the performance of the justice system, there is a growing call for survey data to understand people's justice needs and experiences. This qualitative and people-centered approach to data was reflected in the creation of SDG indicator 16.3.3 on civil justice. Today, promising legal needs surveys have been implemented at the local and national level, such as in Argentina, Canada, Indonesia and South Africa.[13] In the case of South Africa, civil justice questions were added to the existing Public Safety and Justice Survey run by Statistics South Africa, a government agency, which goes out to 30,000 households.[14] By contrast, in Indonesia, the Indonesia Judicial Research Society, an NGO, and two legal aid organizations collected survey information in two provinces. The initial report led two a number of recommendations, including the call for a national survey led by the government. At the project level, LawPàdí in Nigeria[15]

and the Civil Resolution Tribunal in Canada send out customer satisfaction surveys that look beyond a customer's legal outcome.

The corollary to data collection is data deletion. In one example, the Administrative Office of Pennsylvania Courts, alongside the state police, created an automated system to flag criminal records in the court's database for automatic sealing when statutorily allowed. Once flagged by the algorithm, the state police confirm that the case qualifies for sealing and then the data is hidden from the public and background check companies. In March 2020 alone, the program sealed 2.8 million cases.

Being insufficient to merely collect data, it also has to be organized in a reliable way to be easily usable. Organizing data is accomplished by the adoption and use of data standards, which are the rules by which data are defined, structured, and recorded. For this research, it was difficult finding primary source documentation of local data standards in non-English speaking countries. There is also an international movement to improve justice system data standards. Chief among them is the UN Office of Drugs and Crime's International Classification of Crime for Statistical Purposes (ICCS), which is a standard for collecting criminal offense data. According to one expert on justice system data, there is no internationally accepted standard to collect judicial data.[16]

In the US, data standards touching on most justice system agency types are being developed and deployed. Examples include: the National Center for State Courts' National Open Court Data Standards to help collect administrative court data; for civil legal aid groups, the National Subject Matter Index is used as a comprehensive taxonomy to track relevant documents and data; for US law enforcement, the FBI and the Bureau of Justice Statistics (BJS) developed the National Incident Based Reporting System, an open data standard for local crime and arrest data; and BJS developed the National Corrections Reporting Program, which led to some corrections and parole data being collected across all 50 states.

In Florida, the state legislature passed a law requiring approximately 140 criminal justice data points to be collected on each arrested person, which is done primarily by police and court clerks. To enable this legislation, the state standardized arrest affidavits so that the same data would be collected in the same format across the state's 340 local- and county-level law enforcement agencies.

In countries where legal information is scarce, locked up in a paper format, or behind a paywall, NGOs and law libraries work to liberate and structure this data. African LII, which has 16 chapters across Sub-Saharan Africa, including Malawi, Sierra Leone, and

Zimbabwe, works to digitize court judgments, statutes, and regulations. Their cross jurisdictional work also fosters a universal citation system that is beginning to be used by some courts and law students.[17] In the UK, the British and Irish Legal Information Institute (BAILII) has hosted primary legal documents for public use. That system is currently being transferred to the UK National Archives.

In the US, where cases are still commonly in paper format or behind paywalls, the Free Law Project and the Harvard Law Library's Caselaw Access Project collect federal court documents and state-level court judgments, respectively, and make them free to the public. The Philadelphia District Attorney's Office sets itself apart from other prosecutor offices for its collection and publication of administrative data.

Also in the US, the Criminal Justice Administrative Record System (CJARS) at the University of Michigan collects, cleans, and standardizes justice data across jurisdictions and agencies. With data from 21 state and local criminal justice system agencies, CJARS created an algorithm that creates linkages between records across separate databases, a first-of-its-kind for administrative criminal legal system data.

These various projects collecting and improving the utility of data benefit agencies and researchers alike, however, they bring new challenges. With sensitive information, collecting and housing legal system data can lead to the unintentional release of private information or draw unwanted attention from nefarious actors, which adds a layer of complexity.

3.2 Trust & Consent Layer: Privacy, Access, & Security

Collecting sensitive data as described in the first layer requires significant effort to protect people's personal information. Failing to do so can harm the integrity of the justice system itself.

Threats come in the form of hackers, slip ups by agency staff, and unscrupulous businesses looking to exploit public data. Courts and legal aid organizations around the world have been hacked or experienced ransomware attacks. In one recent example, the US federal courts were breached during the sprawling SolarWinds hack, which compromised electronic filing and potentially sensitive documents. Courts in Brazil and elsewhere have also been hacked. In Chicago recently, GPS ankle monitoring information, including name and whereabouts of the monitored, was accidentally leaked online. In other instances, publicly available criminal records have been published online to extort people out of money. These types of breaches or

misuse of data can lead to breaches of trust between the public and the justice system, which is why security is critical to this rapidly digitizing space.

With this in mind, justice digitization requires thoughtful and strict precautions. The trust and consent layer covers three separate but related issues: privacy, access, and cybersecurity. When it comes to keeping justice system data private, many countries have different data privacy laws, expungement statutes, and rights to be forgotten. While important, this report instead focuses on the process and technical aspects of justice system data protection and how those laws limit or inform this work.

Speaking broadly, many countries rely on anonymizing or aggregating data before sharing it publicly. Merely anonymizing personal identifying information is insufficient to protect data subjects, as re-identifying data has only become easier. One mature approach to criminal record privacy is done by CJARS, managed by the University of Michigan and the US Census Bureau. This program, which has over 2 billion records from 21 states, anonymized its data and created a unique identifier for each individual's journey through the justice system.[18] Further, data from this project is not allowed to be exported from the secure online environment or published if the data grouping is smaller than a Congressional district. This level of aggregation means that conclusions can only be made about a group of people, while protecting individual data subjects.

At the legal level, programs have a responsibility to comply with local privacy regulations; however, balancing privacy interests and publishing justice system data can be challenging. To follow privacy laws, Estonia's court judgment database limited public access with a captcha, which hurt automated scraping — a process that bulk downloads data used to develop databases and analytic tools. In Moldova, European privacy rules informed decisions about what would be available to the public when creating the nation's court records database.[19] In France, the government banned the use of data concerning judges or court clerks "with the purpose or result of evaluating, analyzing or predicting their actual or supposed professional practices." This law was seen as an impediment to improving judicial analytics in the country. In Chile, the court's strict interpretation of the country's privacy act curtailed access to ostensibly public data.[20] Access is so strict, companies that attempted to use this data were pursued criminally in the past by the state.[21] Although such prosecutions did not end in convictions, it might have produced a chilling effect especially in companies trying to acquire large amounts of data.[22]

Where privacy laws do not foreclose on the publishing of justice data, access controls are the rules that decide who can see what data. In Brazil, the courts have data request managers to assess the validity of data requests and requestors.[23] In Chile, to access relevant information and collect a large amount of data for academic purposes, researchers must apply for court record access and provide assurance on how they will store and use the data, accept conditions regarding privacy, and can only publish aggregated data.[24] In the UK, the DataFirst project provides accredited researchers access to anonymized, individual data about legal system-involved people and outcomes through two secure research settings. In the US, researchers apply and are granted access to CJARS. Whitelisted researchers can only access the data in an online environment hosted by the US Census Bureau. When a researcher wants to take data outside of the environment for publication, a review board at the Census Bureau inspects the data to ensure that it can not be easily re-identified.[25] Both CJARS and The Civil Justice Data Commons at Georgetown University have or are developing a contract for justice agencies that defines what data will be shared and for how long.[26]

Beyond privacy and access issues, other cybersecurity issues need to be considered, including how data is stored and transferred. Moldova engaged with traditional security testing when developing their court case management system, which should be standard practice worldwide. Estonia developed a sophisticated system for data collection that backs up its data in an out-of-country server, called a Data Embassy. The underlying infrastructure pioneered by Estonia, called X-Road, is also used in Japan, Namibia, and Ukraine. At the product-level, trial evidence management platform CaseLines, for instance, uses a Microsoft server farm to protect courtroom evidence for their South Africa project by leveraging existing enterprise security features.

Competently managing privacy, access, and cybersecurity is critical for the success and legitimacy of access to justice technology projects. These, alongside data standards, set the stage for the common technologies layer to use and manipulate data without concern of breaching a data subject's trust.

3.3 Common Technologies Layer: Identification, Payments, & Document Management

The common technologies layer, also called the microservices layer, is the bridge between the government, its data, and services provided. This includes technologies that don't receive a lot of attention or fanfare, like sign-in and validation systems, payments processing, and document sharing. These tools are reusable across a

platform, agency, or government, such as a national digital identity. These technologies are foundational to the advancement of access to justice technologies, because they support interoperability[27] and usability.

Largely linked to the court automation and government digitization work from the last two decades, some countries have built holistic digital systems, while others adopted constituent parts, like digital signature verification or trial evidence storage.

Estonia's e-Justice System, one of the world's most advanced, is driven by the government's investment in key digital infrastructure. This infrastructure includes a national digital ID that can be used to validate a person's identity across government agencies, and the X-Road system, which provides the underlying infrastructure for government data to be used and shared. The judiciary itself built a single e-file portal for the entire three-tier court system.[28] Through the e-filing system, service of process is handled and files are timestamped to assist parties in filing subsequent documents on time.[29] The courts also have a unified payment service.[30]

China has two simultaneous court modernization projects, Internet Courts and the Smart Courts initiative. Internet Courts started as a response to the increasing number of cases stemming from online conflicts, including e-commerce, defamation, and domain disputes. Piloted in Beijing, Guangzhou, and Hangzhou, the process to file, pay, serve, share evidence, and partake in a hearing is through a single online portal. ID verification occurs with the help of a state ID or passport, which is verified with facial recognition. It is believed by local experts that these courts are proving grounds for ideas that can be used in China's other courts.

By contrast, the Smart Courts Initiative, which started in 2014, is a broader digitization effort of the country's existing courts. The work being done is familiar to anyone working in court automation: e-filing, virtual hearing infrastructure, evidence storage, and a database of publicly accessible cases.

Looking to streamline business litigation, Kenya's Commercial Court launched a system with a single sign in that allows for the upload of documents, payment, and assignment of cases. The system reduced the days it took to file and serve a case from 40 to seven. This system has not been rolled out across the country's other courts.

In Ecuador, the Constitutional Court developed a three step plan called the Automated System of the Constitutional Court. The first step, which is complete, created a digital document submission portal, where indictments, subpoenas, petitions, amicus curie

and other documents can be submitted. Previously, litigants could only file court paperwork in two physical offices. In the future, this initiative hopes to create a digital repository where these documents can be accessed, among other goals.

Discrete examples of microservices include South Africa's adoption of the CaseLines trial evidence management system by its civil justice courts. The software acts as a repository for evidence. Not limited to justice system actors, self-represented litigants can upload copies of evidence from their email or phone. Permissions to the evidence provides online access to another party, and it tracks access and version control, which is a check on corruption. CrimeSync in Sierra Leone is a crime records management system for courts and police. Ghana's criminal case tracking system helps criminal justice agencies track a case from arrest to release. In Ukraine, the courts recently developed an e-file system for litigants to submit documents online.[31] However, because there is no underlying database to store these digital documents, they are printed by court staff and stored as hardcopy.

These common technology layer examples focus on the administrative mechanizations of justice system agencies. Some of these projects allow for improved public access, while others lay the digital foundation for other services to be built in the services layer.

3.4 Services Layer: Apps, Data Portals, & Websites

The services layer is the most expansive of the four layers, because it encompasses apps, websites, and data projects developed by both the government and private actors for an array of justice related issues. Because the examples in this section are sprawling, this section is broken into subjections by the type of service offered in the order a person experiencing a legal program would encounter it. These subsections are information providers; service, legal referral and advice providers; and process improvement products for justice system processes.

3.4.1 Information Providers

Information websites and apps are being developed by justice system actors and those outside of government. Beyond the presentation of information, these tools have limited functionality. Some of these sites are called "self-help" services, because they are intended to help a lay person without legal representation navigate the justice system. This section is organized by how the information is presented to the user: static websites or apps, programs that help identify correct forms, products that

present information through text message or chatbot, and pictorial presentations of information.

Static websites and apps present legal information, like laws and regulations, case judgments, and some self-help materials. The user is on their own regarding how to apply the information to their situation. The Ministries of Justice of Colombia and Kyrgyzstan published laws, judgments, and regulations online.[32] In the US, The Maryland Judiciary released the MD Court Help app, which digitized court and self-help information in multiple languages.

Outside of government, African LII, through its affiliates, publishes both court judgments and legislative gazettes online. In Ukraine, WikiLegalAid is an open sourced legal information portal. Nyaaya in India publishes legal information on common legal problems, such as criminal, family, and property law. Qanoon in Pakistan publishes local law as an Android app. Mero Adhikar, an Android app in Nepal, makes local laws and cases available. Apptorney in Zambia is a smartphone app subscription service that publishes national laws and case law. JUDY is a case law research company focused on African common law countries, including Ghana, Kenya, and Nigeria. The Free Law Project and Harvard's Caselaw Access Project in the US both publish local laws or case law; the latter has data visualization features and a public API.

Going a step further than providing just information, some sites make government and court forms available in a fillable format. In Argentina, Discapacidad y Derechos is a legal information site that provides various forms to those facing legal issues arising from a disability. LawHelp Interactive in the US provides fillable forms related to common civil legal issues in numerous states.

A more interactive approach to information sharing is through text message or chatbot. In these examples, users can communicate with a person or chatbot to find appropriate information. Sauti East Africa provides services over SMS and WhatsApp aimed at women in commerce that are in low-technology regions of East Africa. Ufulu Wanga in Uganda provides information and documentation support for people facing domestic violence and child marriage. Viamo, based in Rwanda and working in multiple countries, provides legal information for free by text and voice and video recordings. rAInbow is a chatbot in South Africa aimed to assist those experiencing gender-based violence. In Ukraine, the Legal Development Network put a chatbox on its website where live attorneys in their network help people find the information they need.[33] In the US, YoTengo is a chatbot used by immigration law firms to answer

potential clients' questions, schedule appointments, and hand off client conversations to a human employee.

Taking a different approach, some organizations share information through pictures; this is particularly helpful to communicate across linguistic boundaries and with people who have lower literacy levels. Lawtoons in India and Comic Book Contracts in Australia take legal concepts and turn them into illustrations. Creative Contracts in South Africa turns formal contracts into legal binding illustrations with defined obligations and rights.

While making legal and self-help accessible online, it often falls short of people's needs. This gap is sometimes filled by advice, service, referral services.

3.4.2 Advice, Referral, & Service Providers

The projects in this section provide a service beyond the provision of information. In this section, the service may assist with filling out and filing a government or court form, creating a referral to a legal service provider, or providing legal advice or representation.

The services in this section are both legal and legal adjacent, such as applying for public benefits. Haqdarshak in India is a remote support system that helps people file forms related to public benefits and tracks resolution of those filings. To find potential beneficiaries, contract workers go into their communities and help neighbors assess eligibility of government benefits, including aid for education, health care, and employment, by using the company's software.[34] The company is also a vendor to larger businesses, such as those in the construction industry, that need similar services, creating a sustainable revenue stream.[35] In Ukraine, the Ministry of Justice developed the Online House of Justice for people to apply for re-issued government documents pertaining to birth, marriage, divorce, death, and change of name certificates. It also allows them to register non-profits. While web-based, this tool is also bundled with other digital government services on an app called Diia. In the US, Upsolve walks people through filling out federal bankruptcy forms and filing.

For people that need legal assistance, there are a number of digital referral services. In Argentina, the Access to Justice Centers program used WhatsApp to promote its legal documentation campaign and find eligible clients. Eschewing a traditional ad campaign, this approach leveraged local leaders to share information about the importance of legal documentation and how to connect with a center. The referrals were made directly through WhatsApp to the center, and then an attorney could follow

up with services. After one week, this community-based dissemination approach led to 10,000 people, some with low literacy, texting legal aid with questions. [36]

In Ukraine, PRO-BONO SPACE brings the private sector together with legal aid to provide pro-bono legal support. This is similar to Paladin, which operates in the US and UK. Also in Ukraine, Prosto Prov, or Pro-bono, and IDPRights App provide legal information and referrals to service providers. Prosto Prov is similar to the US company Avvo, but led by legal aid. Justika in Indonesia is an online referral service.

Other organizations provide their legal services through texting, chatbot, or over the phone. Barefoot Law in Uganda provides legal information and advice over SMS. Lawyers4Farmers, started by Kampala Legal Aid in Uganda, provides legal advice over WhatsApp. LawPàdí in Nigeria provides legal information and legal chatbots on divorce, landlord tenant issues, and business creation. He!Lawyer in Benin provides multiple services, including a texting option with an attorney through the company's app. In Estonia, Hugo Legal is a private company hired by the government to complement the public legal aid system. It provides a chatbot to users with common legal issues and makes referrals to government attorneys for those who qualify and private attorneys for those that don't. The company is expanding into the rest of the Baltics and Poland.

LawStrive in Nigeria provides online legal services, primarily focused on business law, wills, and probate. Pop.Law in South Africa provides web, phone, and text unbundled legal services. Legal Alarm in Ukraine is a smartphone app that provides access to a local attorney and legal advice, notifies the user's network through social media of an emergency, and can geolocate the user's phone. This is similar to Notifica in the US, which lets people facing deportation alert their network, including their attorney. Good Call in New York City provides 24/7 phone-based legal help for those under arrest.

Collectively, this subsection illustrates the various technology-enabled onramps to legal services that are being created. Not just limited to client-facing tools, this same type of thinking is being used to improve justice system agencies.

3.4.3 Justice System Process Improvement Products

Justice system process improvement products are being built inside and outside of government. This includes online dispute resolution systems, AI used by courts to aid efficiency, technologies deployed by criminal and civil legal aid, and tools that help people collect data or evidence.

Online dispute resolution systems are used by an adjudicative body to resolve matters virtually. While many embraced virtual hearings during the pandemic, like the Royal Court of Justice in Bhutan and Justice Defenders in East Africa, online dispute resolution systems don't replicate the court process on video, but are asynchronous experiences where parties present and resolve a conflict in an online environment. This approach has not yet made a strong presence outside of North America, Europe, and China's Internet Courts.

In British Columbia, Canada, The Civil Resolution Tribunal is an administrative tribunal and a part of the court system. It provides online resolution for auto accidents, small claims, and condominium disputes. Estonia has an online procedure for civil claims under 6,400 Euros, where plaintiffs can file their claim and receive a judgment—so long as the defendant does not contest the claim.

In the US, Matterhorn is an asynchronous dispute resolution system used by local trial courts. It handles matters including family and traffic court and warrant resolution. In Michigan, local police in Ann Arbor use this system to approach homeless camps and remotely resolve outstanding warrants on a tablet. Modria, now a part of software vendor Tyler Technologies, is an online dispute resolution platform used by courts.

Beyond creating an online environment for dispute resolution, other countries are testing how AI can impact court processes. The Victor project in Brazil is a database of cases appealed to the nation's Supreme Court, which has a significant backlog.[37] With this training data, an AI tool was built to assess petitions to the court and identify whether or not there is a relevant point of law to accept on appeal. Also focused on court efficiency, China created an "AI judge," which is intended to help take on repetitive judicial tasks and provide guidance during hearings.

Various types of tools are also being built for civil legal aid and public criminal defenders. Baobab.law in South Africa helps public interest lawyers digitize and centralize documents, provides version control, and delegates tasks to members of the office. JusticeText in the US is audio-visual evidence management software for public defenders. Using natural language processing, a form of AI, the software generates transcripts of body-camera footage, interrogation videos, and jail calls. Used by public defenders in the US, Uptrust sends criminal defendants on community release notifications about their court dates to increase compliance and decrease bench warrants for failures to appear. Kids In Need of Defense setup remote kiosks at immigration detention facilities in the US so kids can speak with their attorneys over Skype.[38]

At the individual level, there are numerous projects that aim to empower those experiencing a legal issue by helping them collect reliable data or evidence.

In Russia, Gray Zone helps prisoners and their families track Covid-19 outbreaks in the country's jails, which is data otherwise not published by the state. In Brazil, Mexico, and Ecuador, environmental advocates use sensors, cameras, and drones to track pollutants and map damage to inform environmental litigation and advocacy.

In the US, HeatSeek and JustFix help tenants collect and organize data about their rental property to bring successful legal claims against landlords. Similarly, Callisto helps survivors of sexual assault collect relevant information to later be used in police reports or in court. Tella, an agnostic technology, is a documentation smartphone app. It is built to record human rights violations in environments with limited or no internet connectivity.

The work being done to improve justice system processes, advice and referral, and the provision of legal information illustrates every area of the justice system is currently being experimented with. However, this experimentation has left open significant questions about justice technology's impact and future.

4.0 Questions for Further Research

While significant work has gone into building justice technologies, there are critical knowledge gaps. This section calls attention to some of the areas in need of further research.

> *What justice technologies show demonstrable impact and why?*

Knowing what projects close the justice gap remains elusive. Failure to monitor outcomes is an ecosystem-wide problem, according to the Engine Room.[39] The problem is persistent because there isn't an accepted definition of what "success" means for a justice technology. Currently, user numbers and web traffic are primarily used to illustrate if a justice tech project "works" or not. This approach is insufficient, because web traffic says nothing about the impact and outcomes these tools have on users themselves. In other instances, merely digitizing a service or process is seen as a success--even if the output is a broken digitized system. Sometimes a project's success is defined by cost savings and efficiency, in other instances it's about whether it supports state control. In rarer cases, success is defined by user outcomes. This is rarer because many products offer support for one step in the user's journey and therefore can't see the user's ultimate conclusion.

While collecting outcome data might not be implicit to every tool, improvements can be made. At an individual project level, collecting and reporting outcome data should be prioritized through surveys provided either in-person or through the tool itself. Organizations can also implement customer satisfaction surveys during or after providing a service. Done by LawPàdí in Nigeria, this approach looks beyond legal metrics and tries to understand the user's experience more holistically. At a justice system level, more robust data capture processes would allow policy makers, the public, and justice technology developers insight into outcomes, including how a test group fared after using a tool or service compared to a control group.

> *What is being done to identify people who do not know they have a problem with a legal remedy?*

A majority of people do not understand that a problem they have is a legal one.[40] This means the majority of people facing a legal problem do not seek legal assistance. Many projects focus on meeting existing needs, rather than tapping into unmet need. This means that millions of people will continue to experience legal issues without recourse.

There are examples, however, of finding and ameliorating unmet needs. In Argentina, the Access to Justice Centers' legal documentation campaign languished over traditional media. However, WhatsApp created successful community-level dissemination. In this example, the program partnered with local leaders, like government officials and NGO executives, who then connected with grassroots leaders to share information about the Center's government documentation services. Within a week, legal aid was fielding questions on WhatsApp from 10,000 people. Once this connection was made, legal aid was able to get more people into its office for legal documentation and other services.

In the private sector, Haqdarshak in India has contractors, often women, that go door-to-door in their community to help identify neighbors' needs and government benefits they qualify for. This leverages the use of the organization's technology, without the beneficiary needing to have access to the internet or even be literate. The contractors are compensated through the nominal fee that beneficiaries pay for the service. In this report, Haqdarshak sets itself apart from other projects because they actively seek out potential users, as opposed to waiting for customers to find them.

> *What does an actual justice-as-a-platform look like and could it close the access to justice gap?*

This report was organized around a “justice-as-a-platform” metaphor, but what would an actual justice platform look like and how would it impact the access to justice gap? While some justice agencies and government technology vendors are deploying APIs and data standards--key components to a functional platform and interoperability--this work is still being done piecemeal and without a complete conceptual vision of what a digital justice system would look like.

A lack of interoperability makes it harder to close the justice gap. In Argentina, Access to Justice Centers could not access social security data, limiting its ability to follow up with clients or do a complete needs assessment.[41] In Brazil, only the judiciary has access to the VICTOR system, hindering experimentation, innovation, and research.[42] In Ukraine, the courts’ new e-file system should improve data capture and access to that data, but once a document is submitted online it is turned into paper for storage.

Like building highways, developing open data infrastructure and building APIs in justice agencies would create society-wide benefits. It would radically improve how justice agencies operate and expand the type of support private industry and NGOs can provide to the public. By example, Estonia has some of the most mature government data infrastructure in the world, which makes it easier to protect or share information across agencies. The X-Road system allows public and private services to interact, data to be shared securely, and can create cross-border data sharing. This has made it easier for digital-first service providers in the Estonian private sector to function and grow.[43]

Evolving the justice system into a digital platform requires hard discussions about data retention, publishing, and deletion; adding information management to core justice agency competency; and what access and role the private industry has over justice system data and services. Just because an operation can be digitized and outsourced doesn’t mean it should. So, what are those limits? Further, what externalities could be created by this approach?

No small feat, this concept will require funders and government leaders to think bigger than individual services or agencies and reimagine how the justice system could operate as an actual system.

> *Who is left behind by an increasingly digital justice system?*

A perennial boogieman of the justice technology sector is the digital divide. Here the concern is that, as more services digitize, those without access to the internet,

whether it be for infrastructural, financial, or political reasons, will be left behind and unserviced. While this is possible and it isn't desirable, currently, in a period with limited digitization of justice system services, one-third of the world's population has their legal needs met. At the same time, about half (51 percent) of the world's population had access to the internet in 2019. With access to the internet outpacing access to justice, people with internet access also find themselves in the justice gap.

All the same, design choices can be made to track and ameliorate the divide. To track the impact of these tools, demographic information should be captured to know what segments of society are benefiting and, conversely, being left behind by digitization. When it comes to amelioration, there are multiple examples worth exploring. Sauti East Africa communicates over text to better provide its services in low-bandwidth regions of East Africa. The Argentinian Access to Justice Centers built its case management software to work offline so that client information could be captured in rural environments. To bridge the divide with hardware, Justice Defenders and Kids In Need of Defense both make audio-visual equipment available to incarcerated people so they can appear remotely at trial or speak with an attorney, respectively. Another approach is taken by Haqdarshak, which has its contractors take its product directly to people and fills it out on their behalf--technology ownership is not required on the part of the beneficiary. Echoing the first question in this section, better research is needed to know if these approaches foster more equitable outcomes.

> *How, if at all, should ideas from authoritarian countries be adopted in democratic societies?*

Attention grabbing ideas in this space are not a monopoly held by democratic states. Digital justice evangelists find themselves increasingly promoting projects that centralize authoritarian power.[44] Adding concern, these projects exist in an environment with little-to-no free press or independent evaluation, calling into question the official story told about these tools.

To that end, as new justice technologies are created by authoritarian countries, the rule of law community must determine how, if at all, ideas and practices can be safely extricated from these projects for use in democratic states. Not limited to projects from authoritarian states, any technology that collects expansive personal data can be abused by any aspiring despot. Failing to be critical of these projects and to create technical and legal safeguards against abuse could lead to the adoption of technologies in fragile democracies that lay the grounds for a turnkey tyranny.

> *When supporting justice technology projects, what's the international development community's appetite for failure?*

If the rule of law development community is going to invest in iterative, people-centered technology, then there will be less top-down control and more experimentation led by community need. This approach can build stronger products, but it will mean more failures along the path to success. To this end, the development community needs to ask itself: How much failure is it willing to accept? How much time and how many iterations of a project are acceptable as a project finds sustainable footing? How can failure be incorporated into a framework for successful projects? The international funding community will also have to reconcile its demands for "evidence-based" projects with the desire for new, innovative ideas. They can't simultaneously have both--at least not at first.

Regardless of risk tolerance levels, failure needs to be documented. Software is ephemeral, so projects will come and go--and their institutional knowledge with them. With this in mind, there should be a coordinated effort to have autopsies written and published by those that led failed projects. This will go a long way in building knowledge for funders and innovators in the space.

> *How do justice technology projects become sustainable?*

The corollary to writing autopsies of failed projects is capturing what worked at the successful ones. Managing funding and revenue, finding market fit, and navigating political realities, make sustainability difficult. So, to help other organizations in this space, resources should be built by projects that figure out solutions to these challenges.

On revenue, HiiL's Justice Accelerator provides some guidance. Focused on sustainability, they work with their grantees to build a sustainable revenue model that allows them to cover the costs of their social enterprise. One accelerator alum, LawPàdí, even published a case study on its path towards sustainability. However, HiiL's model can only go so far as people are willing to pay. Building a platform for the needs of truly impoverished people alone will never provide sustainable revenue. This could be ameliorated by public-private partnerships or creative business models. For example, Haqdarshak built its technology to benefit low-income people and monied business interests. The latter creates a sustainable business model and supports the charitable side of the organization.

Finding market fit can be helped by taking a people-centered approach. Currently, consumer-facing justice technology and the needs of people do not often align, according to researcher Rebecca Sandefur.[45] She concludes this occurs for a number of reasons: service providers drive development, as opposed to user need; a lack of funding; and outdated design practices and business models. Taking a people-centered approach would help justice innovators understand the problems people face and the support they actually need. While this is more time consuming, it leads to stronger products.

Harder to control are the political realities that confound justice technologies. Shifts in power have impacted open government work in Georgia, legal aid modernization in Argentina, and closed down an office dedicated to access to justice in the United States. In other instances, rules related to who can provide legal services have been used as a bludgeon by bar associations looking to beat back competition from technology companies.

Regardless of the issue and the country it happened in, a body of knowledge should be developed to document what works.

5.0 Conclusion

Even with the energy and attention of the last two decades, justice technology is a sector still finding its footing. However, as replicable models begin to emerge and interoperability is improved, its potential grows clearer. Reaching that potential, and shrinking the justice gap, will require an amalgam of people, policy, and technology that reacts to and meets people's legal, technical, and social needs. Only in this confluence can we expect technology to help provide justice for all.

Appendix 1.0: Interviews

Unless cited in the report, no idea or section is attributed to an interviewee or their organization. Interviews occurred over a video or voice call, except in a few rare cases that occurred over email. All interviews took place between March and May 2021. Each entry is cited by name, relevant title, organization, and country.

Sandra Allain, Professor and Director, the Design, Justice, & Sustainable Development Lab, Pennsylvania State University, USA.

Maria Bedeva-Bright, Co-Founder, African Legal Information Institute, South Africa.

Linda Bonyo, Director, Africa Law Tech Association, Kenya.

Matthew Burnett, Policy Officer for Legal Empowerment, Open Society Justice Initiative, USA.

Geralyn Busnardo, Chief of Party, Chemonics International, Kosovo.

Dr. Natalie Byrom, Director of Research and Learning at The Legal Education Foundation, UK.

Peter Chapman, Fellow, Center on International Cooperation at New York University, USA.

Aniket Doegar, CEO, Haqdarshak, India.

Sandra Elena, Coordinator Open Justice Program, Ministry of Justice and Human Rights, Argentina.

Celeste Fernandez, Coordinator for Disability Rights, Asociación Civil por la Igualdad y la Justicia, Argentina.

Isabela Ferrari, Federal Judge, Judiciary of Brazil, Brazil.

Artur Fjodorov, CEO, Hugo Legal, Estonia.

Brian Hannon, CEO, Millenium Partners Consulting, USA.

Risto Hübner, Founder, Estonia Legal Hackers, Estonia.

Babatunde Ibidapo-Obe, CEO, LawPàdí, Nigeria.

David Jackson, Senior Vice President, CaseLines, UK.

Maha Jweied, Former-Acting Director, Office for Access to Justice at the US Department of Justice, USA.

Ricardo Lobos, Faculty of Law, Universidad Diego Portales, Chile.

Sarah Chamness Long, Director of Access to Justice Research, World Justice Project, USA.

Themba Mahleka, Former-Innovating Justice Agent, HiiL, South Africa.

Gusatvo Maurino, Former-National Director of Access to Justice, National Ministry of Justice, Argentina.

Solly Molayi, Director of Transport Statistics, Statistics South Africa, South Africa.

Evert Nõlv, CEO, ExtendLaw, Estonia.

Jordan Papp, CJARS Project Manager, University of Michigan, USA.

Sebastián Pilo, Director, Asociación Civil por la Igualdad y la Justicia, Argentina.

Yevgen Poltenko, Executive Director, Legal Development Network, Ukraine.

Jean Redpath, Senior Researcher, Dullah Omar Institute at the University of the Western Cape, South Africa.

Andrew Solomon, Senior Rule of Law Advisor, USAID, USA.

Dio Ashar Wicaksana, Director, Centre for Community Justice and Development, Indonesia.

Mimi Zou, Associate Professor of Law, University of Reading, UK.

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Footnotes

1. pg. 10-11 ↩
2. pg. 5. ↩
3. pg. 7-8. ↩
4. pg. 7 ↩
5. pg. 25. ↩
6. The author of this report created and curated this project. ↩
7. *See* Section 2.0, paragraph 7. ↩
8. pg. 7. ↩
9. Interview with Mimi Zou, March 31, 2021. ↩

10. Ibid. ↩
11. Interview with Artur Fjodorov, March 17, 2021. ↩
12. pg. 15 ↩
13. Interview with Sara Chamness Long, April 19, 2021. ↩
14. Interview conducted over email with Solly Molayi, April 28, 2021. ↩
15. Interview conducted over email with Babatunde Ibidapo-Obe, April 27 - May 10, 2021. ↩
16. Interview with Sandra Elena, April 8, 2021. ↩
17. Interview with Mariya Badeva-Bright, March 4, 2021. ↩
18. Interview with Jordan Papp, May 7, 2021. ↩
19. Interview with Brian Hannon, March 4, 2021. ↩
20. Interview with Ricardo Manuel Lillo Lobos, March 10, 2021. ↩
21. Ibid. ↩
22. Ibid. ↩
23. Interview with Isabela Ferrari, March 10, 2021. ↩
24. Lobos. ↩
25. Papp. ↩
26. Papp; Tanina Rostain and Amy O'Hara, Data and Civil Justice, presented at Stanford Law School's Legal Tech and the Future of Civil Justice conference, March 3, 2021. ↩
27. For courts, the National Center for State Courts put forward technology standards for a court component model, which helps avoid adopting monolithic technical solutions. Instead, this approach has courts focus on technical specifications that improve interoperability across a number of different technologies and vendors. ↩
28. Interview with Risto Hübner, March 11, 2021. ↩

29. Ibid. ↩
30. Interview with Evert Nõlv, March 18, 2021. ↩
31. pg. 32. ↩
32. pg. 12. ↩
33. Interview with Yevgen Poltenko, April 26, 2021. ↩
34. Interview with Aniket Doegar, April 27, 2021. ↩
35. Ibid. ↩
36. Maurino. ↩
37. Ferrari. ↩
38. pg. 32. ↩
39. pg. 69. ↩
40. pg. 20. ↩
41. Maurino. ↩
42. Ferrari. ↩
43. Fjodorov. ↩
44. Richard Susskind, Online Courts and the Future of Justice, pg. 170-1, 2019. ↩
45. pg. 14. ↩