

# Technology & Justice Intersections



## Acknowledgments



**Centre for Law and Social Justice**  
School of Law,  
College of Human and Social Futures  
University of Newcastle NuSpace,  
NSW, 2300

### Innovation in the Justice Sector

This project considers how technology can and is reshaping justice processes and outcomes. Professor Tania Sourdin has developed a typology framework that identifies the three main ways in which technology is already reshaping the justice system. They are; 'supportive technology', technologies that can assist to inform, support and advise people in justice activities, 'replacement technology,' technologies that can replace activities and functions that were previously carried out by humans and 'disruptive technology,' technologies that can provide for different forms of justice, particularly where processes change significantly. The first two areas have supported justice innovation, which has the potential to improve access to justice by; making legal services easier to access, guiding users through their legal choices and allowing people to engage with self-help processes. In the context of the COVID-19 pandemic, innovations in this area have ensured legal processes can adapt appropriately with video conferencing technology and justice apps. More disruptive technologies raise significant issues particularly in the context of the use of more advanced Artificial Intelligence (AI) in the justice sector including considering; the legality of decisions made by AI Judges, translating law into code, discretionary judgements and algorithmic bias.

At all three levels of technological change, there are questions about innovation readiness and the preparedness of courts, judges and legal practitioners within the justice system to embrace change. In addition, there are ongoing concerns about the appropriateness of changes that may not only transform the work of individual judges but also transform the justice system and the place of courts and judges within society. Research work has focussed on the use of AI to make decisions in the legal domain, the use of apps in the justice sector, how supportive technologies may change the justice experience, how case management can be improved and how judges engage with newer technologies. A current large scale international research project is currently focussed on judicial attitudes to technology use and potential changes in relation to Judge AI. This 'Briefing Paper' draws upon some of Professor Sourdin's work that has explored the use of technology and unless otherwise stated 'Technology and Justice Intersections' is presented as a contribution to debate and discussion and represents developing thinking about the research. Material in this paper draws upon Professor Sourdin's extensive past published work in the field as well as her current work.

Enquiries may be directed to:

Professor Tania Sourdin, Dean and Head of School at Newcastle Law School, University of Newcastle.

Tania.sourdin@newcastle.edu.au

(02) 492 15839

Nu Space: Room X-531, Level 5 409 Hunter St, Newcastle NSW 2300.

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## 1. Summary

This paper explores justice innovation, through the application of Professor Sourdin's typology framework. During the COVID-19 pandemic, a number of courts around the globe responded by supporting remote hearings and online case management approaches. Judicial responses to COVID-19 have been partly dependent on the court system readiness to adopt or adapt technologies. Some courts successfully transitioned judicial activities to support remote access arrangements, largely because the basic infrastructure existed to enable the transition.

Despite some reservations around replacement and disruptive technologies, supportive technologies have potential to pave the way for positive developments in the justice sector.

This paper explores some issues relating to:

- Innovation in the Justice Sector
- Justice Apps
- Judges, Technology and AI
- The Digital Divide

### 2. Introduction

The purpose of this Briefing Paper is to consider the impact, outcomes and consequences of the development and use of technology in the judicial system in Australia and beyond. AI refers to an umbrella term which encompasses branches of science and technology and often involves the creation of complex algorithms to enable decisions to be made. Machine-learning tools offer the potential to make more accurate decisions based on larger quantities of data than humans are capable of processing. Machine-learning algorithms continuously update their calculations and hence can 'learn' how to make more accurate predictions as more data passes through their program.

Technology can assist individuals with legal tasks and has potential to reshape the justice system, improve access to justice and demystify legal institutions. Justice innovation opportunities raise various concerns, including those linked to the 'digital divide.' Such concerns include; accessibility issues, ethical challenges raised by dehumanisation of legal processes and various privacy, security and confidentiality risks.

This briefing paper aims to explore:

- Different forms of justice innovation that are supportive, replacement and disruptive technologies.
- Shifts during COVID-19 that included a rapid uptake in supportive and replacement technology to support remote access arrangements.
- The role of justice apps, mobile and web-based programmes that can assist individuals with; legal tasks, reshape the justice system, improve access to justice and demystify legal institutions.

- Judges, technology and AI, the process of automation characterised by a continuum of levels rather than as an all-or-none concept.

Supportive technologies are increasingly being used in the justice sector to assist people, by enabling them to better understand justice system processes and to engage online with courts and other justice providers (for example, mediators). Replacement technology can assist with the referral of disputes to humans (lawyers, mediators and experts) and enable more tailored advice and support to be directed at people who may be engaged in justice processes. Apps that may use both supportive and replacement technologies can be utilised to triage cases to support timely finalisation of disputes.

Disruptive technologies that rely on more sophisticated forms of AI, can enable matters to be algorithmically assessed based on key indicators or previous jurisprudence in order to determine the likely outcome of the case perhaps before being sorted for human examination (Morison and Harkens 2019: 632). This level of automation could improve the effectiveness of court and justice systems. However, the use of replacement and disruptive technology in human decision making raises a number of concerns. These include; the impacts on people, privacy and confidentiality issues, algorithmic bias, how fundamental rights are supported, and how fairness and transparency can be ensured. Further, questions around data use and the availability of useful data are critical in terms of Judge AI. The capacity to rapidly change ways of operating is dependent on the extent to which a court has already embraced technological change, as well as the extent to which there is funding and judicial enthusiasm to enable a court to do so. Ethical issues also abound and are linked in part to the role that judges play in a democratic society.

### 3. Innovation in the Justice Sector

Justice must be considered in the context of varying philosophical meanings. Supportive technologies, such as phone and web-based justice apps have a pre-litigation and educative placement in the system and may support justice in the context of increasing access and education about key principles and values. Replacement technologies that enable Online Dispute Resolution (ODR) can support justice in terms of procedural or substantive justice. The extent to which more disruptive technologies are able to incorporate justice values is somewhat contested. The use of AI technologies to determine liability issues in civil cases and penalties in criminal cases, including sentences of imprisonment has been problematic. There are concerns relating to the transparency of decision-making, algorithmic bias and enforceability.

Supportive technologies such as, videoconferencing, have the potential to save judicial time and may increase the capacity for judges to engage with broader communities. In 2018, a one-month pilot programme involving online hearings in 65 cases in the Victorian Civil and Administrative Tribunal (VCAT) in Australia found that, the use of video conferencing facilities resulted in a higher respondent participation rate. Other benefits included greater convenience for the parties and easier submission of evidence. Further, in 2020, a review of arrangements in UK courts that were the result of COVID-19 changes, found evidence for high level of 'satisfaction' with remote hearings.

Despite perceived benefits, there are costs associated with video-conferencing including set up, maintenance and support costs, making it difficult to determine how video conferencing can provide a more cost effective alternative to face-to-face legal assistance. Further, there are significant concerns around privacy and confidentiality, particularly when clients have access to video conferencing technology in potentially non-confidential locations. In addition,

concerns around technological literacy and bandwidth capacity raises questions around access to justice.

During the COVID-19 pandemic, a number of courts, as a result of ongoing digitisation reform strategies, utilised online filing and document exchange. In the High Court of Australia, parties commencing proceedings on or after 1 January 2020, lodged all documents online using the Digital Lodgement System Portal. Registry services were provided online or via telephone; documents were to be filed electronically with the Court, and the Court temporarily allowed electronic signatures on documents. There is variation amongst judges in terms of how they perceive the capacity of technology to support and enhance the judicial function, which is linked to a consideration of how responsive judges are in relation to cultural and societal changes.

Developments in Online Dispute Resolution (ODR) are reshaping some court and justice activities and can enable greater access to justice, by providing additional dispute resolution options and supporting earlier resolution. These systems go beyond providing information and take an active role in the finalisation of disputes. In the United States, commercial ODR operator *Modria* has been estimated to have resolved more than 1 billion disputes.

While judicial commentators have expressed some enthusiasm for supportive and replacement technologies, support for disruptive technologies such as the use of AI in judgements is less certain. Machine-learning tools offer the potential to make more accurate decisions, based on larger quantities of data, that humans are not capable of processing. At present, it is important to note that, in most cases, the technology acts primarily as a tool to assist in dispute resolution rather than an autonomous system which can actually process, adjudicate or settle disputes independently (Morison and Harkens 2019: 618, 622).

To date, most courts have used technology to replicate existing systems and processes rather than focusing on more extensive reform of court structures and processes.

### 4. Justice Apps

Strategies to address access to justice have historically focussed on modifying court processes and improving access to legal representation. In recent years, a number of researchers have explored the benefits associated with incorporating technology into dispute resolution, with substantial claims made about the capacity of AI and automated systems to improve access to justice. Despite access being the primary objective, some apps are focused on returning profit to commercial developers. Justice apps have potential to improve access to justice through flexible access that is cost and time efficient. This is particularly important for those living in remote areas who may struggle to obtain appropriate in-person legal information and services.

Justice apps have traditionally been used to provide information on selected topic areas, as opposed to specific advice on an individual case. Justice apps can mitigate:

- (i) Financial barriers
- (ii) Psychological and informational barriers
- (iii) Physical barriers

Supportive technologies can remove barriers that prevent disadvantaged parties from accessing dispute resolution processes, through open access to appropriate legal information and advice. Justice apps, have the potential to address power imbalances and increase the possibility of obtaining a 'just' settlement. The flexibility in accessing justice apps is particularly important for those living in remote areas who may struggle to obtain appropriate in-person legal information and services. Justice apps can provide a 'more holistic or client-centred assistance, filling a set of law-related needs not currently provided by the conventional legal services market' (McGill, Bouclin and Salyzyn 2017: 242). Further, apps are a useful tool for

communicating to younger generations who commonly use their smartphones to access information. In the United States, the key objective of the *Apps for Justice Project* – was to, increase access to justice by creating apps that allowed low and moderate-income consumers to address legal issues, both independent of, and with professional assistance, and to assist legal firms in handling a larger volume of low-income clients. Thus, improving access to justice and reducing cost and delays.

Whilst perceptions of justice can be linked to cost and time savings, there is some concern that this focus can result in the system becoming less 'just,' especially where justice processes are 'dehumanised.' Further, there have been some concerns raised that justice apps may skew the access to justice debate. Justice apps which may be marketed as cheaper and easier substitutes for full-service legal representation may reduce the general sense of urgency about the access to justice crisis and distract from the on-going need to improve the affordability and accessibility of real-time legal and court services. Which is relevant as, cost is a major factor in determining whether people are able to defend their rights or commence an action (McGill, Bouclin and Salyzyn 2017: 251).

Justice apps can be categorised according to the nature of what they do, as well as the audience they engage with. Increasingly in Australia, justice apps are being used to do more than provide general information on a topic. In Canada, justice apps target two primary users; lawyers and the general public. In relation to lawyers, justice apps can promote more efficient legal service delivery and assist to streamline legal research. Apps which change the way that individuals interact with the legal system can be divided into four sub-categories:

- Apps that offer general legal information on a specific subject
- Apps that allow users to create legal documents
- Apps that streamline conventional legal processes

- Apps that help individuals with legal research

Apps are also increasingly being used to 'triage' cases, replace paralegals, interpret financial documentation as well as a host of other functions.

Within each sub-category there are a variety of issues and limitations. With apps, there is a risk of digital exclusion and social inequality. This was highlighted in the context of the COVID-19 pandemic as, shifting justice services online potentially left vulnerable groups in disadvantaged positions. Such difficulties may relate to; digital literacy, ability to access high bandwidth services and capacity to purchase or access a device when required. Some of these relate to global inequalities and others relate to inequalities within countries. Further considerations include cultural issues and language barriers and the risk that data collected by apps may be vulnerable to misuse by unauthorised third parties.

Creating evaluation criteria that can be used to apply to justice apps is important (Sourdin, Meredith and Li, 2020) as well as building proper verification and audit mechanisms alongside human review. Such mechanisms can enhance the credibility of an app and can also ensure that outcomes that are reached are perceived to be 'just.' Despite perceived limitations, there are significant advantages that well-designed justice apps may offer in terms of cost and convenience as well as opportunities to support access to justice and produce outcomes that meet procedural justice requirements. It is important to adopt measures that address user privacy and security concerns, so as to not discourage app innovation that would otherwise be in the public interest. A clear approach in evaluating apps will support further developments in the area. In evaluating justice apps, Professor Sourdin has developed four factors which should be considered. Each with a number of variables that could be more or less relevant depending on the app characteristics:

- Ease of use – to what extent are users involved in the design of the app and to what extent does the app support access to justice?
- Effectiveness – the app promotes justice, supports the dignified treatment of people engaged in the justice system and ensures that human review is available and supported
- Privacy and Security Considerations – how data is stored as well as other factors that are linked to security
- Interoperability – the app functions holistically and can be linked effectively to other systems and works on a range of devices with a range of software supports

### 5. Judges, Technology and AI

Central to the establishment and maintenance of the rule of law is the concept that the judiciary remains independent. Semi-automated processes will have a significant impact on the role of judges in the future. However, the extent to which Judge AI will support 'independence' is questionable, particularly if arms of government are involved in the creation. It is likely to be an evolutionary process, following the initial development of supportive Judge AI. Such developments could effectively mimic human intelligence and may even perform more effectively than a human when making a decision. The fact that human engagement might be sacrificed in AI Judge processes, suggests that supportive Judge AI - where levels of human interactions are retained, is likely to be more palatable in the shorter term.

The adoption of automated systems challenges traditional understandings of fairness and justice. Judge AI, has potential to result in cost and time reduction and may result in more credible and less biased outcomes than human judges. In contrast to human decision makers, AI does not have a 'self' and its decisions are not influenced by mundane impacts. In light of such factors, algorithms may help prevent 'embarrassingly disproportionate and often arbitrary courtroom decisions' (Završnik

2019: 11). Such platforms can play an important role in regulating judicial bias, perhaps at the expense of judicial discretion, judicial dissent and activism. In this context, AI can enhance equality before the law by reducing arbitrariness, removing bias and eliminating corruption in the application of the law – resulting in improved efficiency and accuracy. In theory, automated decision-making systems, if designed correctly, can provide transparency at each and every step of the decision-making process. Shedding light on how algorithms produce its recommendations or determinations can simultaneously allow observers to identify biases and errors in algorithms (Deeks 2019: 1833).

Despite potential benefits, there are considerable concerns around the introduction of Judge AI. These concerns include, the capacity for legal problems to be translated into code. Further, there is a risk of overgeneralisation, which can arise when a machine-learning algorithm is too attuned to the idiosyncrasies or biases in the training set, and is therefore inadequate for the task of predicting future novel scenarios, and dealing with the diversity of future cases. This is particularly important in common law systems where judges help develop the law by exploring and creating new precedents.

Whilst some machine learning techniques produce answers that are easy to understand and inspect, neural-network and deep-learning approaches can be extremely difficult for humans to understand, including for the programmers who created them. Further, judicial independence could be undermined where the automated tool that is relied upon to assist judges use proprietary software developed by a private company that is protected by intellectual property laws, making it impossible to understand how its outputs have been generated. Thus, systems that are said to result in algorithmic bias can be the result of either biased data that is drawn from a human system, or the introduction of a system with little focus on design or ethical requirements, or with no human or 'in the loop' capacity.

Issues of algorithmic bias, in respect of the general administration of justice outside of the courtroom can impact on the most

vulnerable members of society. Many administrative decisions in modern countries relate to social security benefits, citizenship matters and other entitlements. By streaming such matters into an automated system, there is arguably a risk of bias against the more vulnerable members of society. Further, hybrid systems raise 'teaming' risks, there is a risk of 'automation bias,' if the human being 'over trusts' the system and endorses the algorithm's conclusion despite contradictory evidence or a clearly unfair result. The opposite risk, 'under trust' could also be true, if the human decision maker is unwilling to accept the algorithm's recommendations, in which case society would have overinvested in useless infrastructure.

The end result could introduce more unpredictability into the decision-making process than a human decision maker acting alone. Despite this, it could be argued that, challenges with coding can potentially be met by including lawyers and policymakers in the creation and updating of these computer programs. Whilst this may be labour intensive and costly, the process is front-loaded.

Where Judges are replaced, further concerns relate to the loss of the 'human element.' Judging is often seen as a very human endeavour which reflects on a variation of experiences including; perspective, humanity, common sense and understanding. The retention of human decision making, arguably, ensures that important ethical issues are determined by humans. This may be even more important where problem solving, therapeutic and restorative court programs are in place.

Further, there are concerns related to the capacity of AI Judges' to perceive the moral underpinnings of the greater community. These concerns are linked to questions around social legitimacy and judicial discretion, as software is logical, may not be reasonable, and legal judgments often require both qualities in equal measure. The Honourable Tom Bathurst, Chief Justice of the Supreme Court of New South Wales, Australia has raised a further issue, the fact that humans are irrational. This is problematic because 'systems which require definite outputs will inevitably fail to predict



or answer human problems accurately.’ The idea of the government ‘reducing individuals to data points that are then fed into an algorithm could seem disconcertingly impersonal – even if ultimately more accurate and efficient’ (Coglianese and Lehr 2017: 1219). Whilst automation can improve predictability and consistency, it also poses challenges for these same principles. Including, when the application of a rule in the automated decision-making context does not comply with statutory or common law requirements. Finally, it has been noted, that not all administrative decisions are of a nature that they can be appropriately or fairly made by automated systems.

### 9. The Digital Divide

There is a need to tailor the design of technological tools aimed at enhancing access to justice, to ensure they do not in fact exacerbate the access to justice gap for intended beneficiaries. Meaningful implementation of justice technologies requires consideration of various barriers and ethical challenges.

Justice innovation opportunities have various challenges including:

- Accessibility issues
- Ethical challenges raised by dehumanisation of legal processes
- Various privacy, security and confidentiality risks.

Promoting justice is the core purpose of technological innovation in the justice arena. Despite this, the digital divide may affect the delivery of ‘justice’ and should be carefully considered. Accessibility issues; including, digital literacy, broadband issues, language barriers, disability and income pose relevant challenges. In the context of COVID-19, the use of remote hearings raised concerns for vulnerable people who might be excluded from the justice system or face difficulties using technology. Further, simplistic algorithms can replicate and/or exacerbate societal biases as a result of the data they are ‘fed.’ There are also valid concerns around transparency. Difficulty in ensuring the validation and authentication of

information, as well as data security. An improvement in data security would involve the enhancement in the type of networks that are used to support the e-justice system. Despite concerns, a machine capable of dispensing ‘AI equity’ could mitigate the problem of datafication, by being even more responsive than human judges when it comes to a case’s subtle factual nuances or changes in social values.

In 2019, it was estimated that more than 1.5 billion people around the world were unable to access a justice system to assist them in dealing with a legal issue, and often those who were unable to access the justice system were the most marginalised members of the community (David et al. 2020: 2). The impact of more sophisticated justice technologies, will depend on the types of technologies that are deployed, how they are deployed and the extent to which they have been adequately assessed. There is potential to improve access to justice, through justice innovation, by removing barriers that might otherwise prevent disadvantaged parties from accessing dispute resolution processes.

### 10. Conclusion

Despite the growth of justice innovation processes - issues associated with the use of technology in the justice sector remain. Including, a general reluctance to innovate, particularly in the private legal practice area. This is unfortunate, as justice innovation show considerable promise in terms of improving the justice sector. In addition to technology reducing cost and delay, it is also capable of mitigating psychological, informational and physical barriers. At the same time, there are challenges with embracing all justice innovation processes, particularly those that may result in the dehumanisation. Other relevant concerns include; the translation of law into code, accessibility and various justice, privacy, security, and confidentiality considerations. To ensure that innovation supports justice, the creation of new regulatory frameworks is likely to be required. In addition, justice innovation requires human expert planning

input, trials, and evaluation using appropriate frameworks.

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