

MEETING THE ACCESS TO CIVIL JUSTICE CHALLENGE: DIGITAL INCLUSION, ALGORITHMIC JUSTICE, AND HUMAN-CENTRED DESIGN

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Access to justice is crucial for a well-ordered society and a functioning economic system. This article focuses on what technology offers as a 'fourth wave' in access to justice, namely a unique range of mechanisms to help meet the extensive legal need in Australia. The article sets out a number of case studies to illustrate the scope of technological change in civil justice, ranging from specialist delivery of legal information to automation platforms. Evident amongst the possibilities offered by technology are also concerns and challenges for ensuring that access to justice is appropriately realised. This paper explores two of the most significant challenges — digital inclusion and algorithmic justice. Two very different potential solutions are then discussed — Black Box Tinkering and human-centred design, referred to contextually as Legal Design.

I INTRODUCTION

Access to justice is a foundational pillar of our society; a promise that all who need the assistance of the law should be able to access our courts and other institutions of justice. As Genn observes, the existence of justice institutions is a public good, crucial for a well-ordered society and for a functioning economic system.¹ Cappelletti and Garth set out two requirements for access to justice — first, that the system must be accessible, with access not contingent on financial means or expertise. Secondly, that any system delivering access to justice must ensure that results 'are individually and socially just'.² Further, they note that the concept of access to justice has changed substantially over time, with the mechanisms by which we can 'make rights effective' developing along with successive reforms to the civil justice system. By virtually any measure, the Australian civil justice system has struggled to provide accessibility, with cost and complexity being the two primary obstacles to achieving access to justice in the civil sphere.

There is great promise in the potential for technology to help make rights effective for the millions of individuals with civil justice problems. Susskind argues that technology will greatly accelerate changes in legal practice, resulting in a commoditised,

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¹ Hazel Genn, 'What Is Civil Justice For? Reform, ADR, and Access to Justice' (2012) 24(1) *Yale Journal of Law & the Humanities* 397, 398.

² Mauro Cappelletti and Bryant Garth, 'Access to Justice: The Newest Wave in the Worldwide Movement to Make Rights Effective' (1978) 27(2) *Buffalo Law Review* 181, 182 ('The Newest Wave').

segmented and unbundled approach to the delivery of legal services.³ While some lawyers lament the impact this will have on their traditional monopoly, others, especially younger professionals, embrace the disruptive possibilities that technology offers to make legal knowledge, processes and institutions available for all who need them – and that

redesigned civil justice processes should be more than an abstract topic for discussion; the collective knowledge and tools to make it happen are available today. Our current access to justice crisis serves as a call to reimagine and redesign public justice processes for civil disputes, centred on the needs of the public.⁴

However, focusing on access cannot come at the cost of individual and systemic justice. There is an increasing body of literature that identifies the risks and challenges of safely, ethically, and effectively using ‘big data’, particularly in the criminal sphere,⁵ but also in the civil law. In this article we approach these questions as relative novices in the field of technology, but with a concern for the systemic possibilities and concerns of technology in ensuring access to civil justice.

Part 2 of this article sets out the context of civil justice need in Australia, before focusing in Part 3 on how successive ‘waves’ of access to justice have offered innovation to address issues of access, efficiency and cost. Technology offers what might be termed a ‘fourth wave’ in access to justice. Lawyers have been quick to identify that it offers enormous potential for civil cases, which are often (although not always) relatively high volume, low value disputes. In Part 4, we draw together current perspectives on this fourth wave as a method for delivering access to justice, highlighting examples of technological innovation with the potential to greatly improve the user experience of civil justice.

In Part 5 we identify two emerging challenges to technological solutions that are very important to consider when it comes to effective solutions to the access to justice. The first relates to digital inclusivity, and the challenge of addressing the digital divide amongst users. The second is Algorithmic Bias and the need for algorithmic justice – a concept that recognises the potential concerns about the design of artificial intelligence (‘AI’) and other algorithm-based justice innovations and recognising the potential for unintended negative impacts on human rights. We then explore two very different potential solutions to ameliorate these concerns. First, Black Box Tinkering – a method that offers opportunity for greater transparency in developing algorithms. This solution is focused on examining solutions that have already been created. Secondly, human-centred design, or more contextually specific, Legal Design thinking – a concept that focusses on embedding user-driven insights into how technological solutions are created from the outset. Here, we advocate for the use of Legal Design thinking methodologies to ensure technological solutions are designed from the outset to meet the needs of end users of legal technology, and not just the needs as they are perceived by system experts such as lawyers and policymakers.

³ Richard Susskind, *The End of Lawyers? Rethinking the Nature of Legal Services* (Oxford University Press, 2010) ch 2.

⁴ Shannon Salter and Darin Thompson, ‘Public-Centred Civil Justice Redesign: A Case Study of the British Columbia Civil Resolution Tribunal’ [2017] (3) *McGill Journal of Dispute Resolution* 113, 136.

⁵ Lyria Bennett Moses and Janet Chan, ‘Algorithmic Prediction in Policing: Assumptions, Evaluation and Accountability’ (2018) 28(7) *Policing & Society* 806, 811–2.

II CIVIL JUSTICE NEED IN AUSTRALIA

As Sandefur has noted, the idea of a ‘civil justice problem’ is not how a typical member of society is likely to conceptualise the problem that they are having with their former or current spouse, their bank, their phone company, their employer, or the local council. Sandefur observes, ‘people often describe these situations using terms that suggest that they may not see them as actionable, in the sense of being something one would try to do something about or change’.⁶ The landmark Australian study of legal need, undertaken by the Law and Justice Foundation of New South Wales (‘the Legal Need Study’), nonetheless clearly depicts the ubiquity of civil disputes and their negative impact on the lives of ordinary people.⁷ Generalising from their large dataset, it should be expected that approximately 42 per cent of Australian adults have experienced a civil justice problem in the last twelve months – with large numbers of people experiencing substantial problems resulting from housing disputes, family disputes, disputes with government, or consumer disputes.⁸

Another critical finding from the Legal Need Study was the impact of social disadvantage on legal need. For example, the data showed that people living with a disability were 2.2 times as likely to experience legal problems when compared with the general population.⁹ Unemployment correlated with a 1.6 times increase, and single parents were twice as likely to experience legal issues.¹⁰ These factors also increased the severity of legal problems that were encountered:

... [t]hat is, when compared to their counterparts, people aged 15–64 years, people with a disability, single parents, people with post-school qualifications, people who had been unemployed, people who had lived in disadvantaged housing and people whose main language was English had significantly higher odds both of experiencing legal problems overall and of experiencing substantial legal problems.¹¹

At the same time, those most likely to experience legal problems are also unlikely to have the means to pay for legal advice. The 2014 Productivity Commission Inquiry Report on *Access to Justice Arrangements* found the cost of legal services prevented effective access for the vast majority of Australians.¹² Chief Justice Wayne Martin, in his address to the Community Legal Centres Association of Western Australia, explained:

⁶ Rebecca L Sandefur, ‘Bridging the Gap: Rethinking Outreach for Greater Access to Justice’ (2015) 37(4) *University of Arkansas at Little Rock Law Review* 721, 724.

⁷ Christine Coumarelos et al, *Legal Australia-Wide Survey: Legal Need in Australia* (Report No 7, 2012), cited in New South Wales Department of Justice, ‘Civil Justice Action Plan: Improving Access To Justice For Everyday Problems’ (December 2018) 2 <<https://www.justice.nsw.gov.au/ljsb/Documents/LSB/civil-justice-action-plan.pdf>>.

⁸ Christine Coumarelos et al, *Legal Australia-Wide Survey: Legal Need in Australia* (Report No 7, 2012) (*Legal Need Study*).

⁹ *Ibid* 68.

¹⁰ *Ibid*.

¹¹ *Ibid* 69.

¹² Australian Productivity Commission, *Access to Justice Arrangements* (Inquiry Report No 72, 2014) 6.

The hard reality is that the cost of legal representation is beyond the reach of many, probably most ordinary Australians... In practice access [to the legal system] is limited to substantial business enterprises, the very wealthy, and those who are provided with some form of assistance.¹³

This quote indirectly recognises a second group that is often overlooked in the context of access to justice, which is small and medium sized enterprises ('SMEs'). A 2018 study by the Australian Small Business and Family Enterprise Ombudsman adopted a different methodology to that of the Legal Need Study, asking SMEs about their experience with 'business disagreements'.¹⁴ They found that while the surveyed SMEs were willing to consult lawyers, they seldom proceeded to more formal dispute resolution options due to the costs — not just financial, but also time costs and the impact on their health and wellbeing.¹⁵ Where SMEs did pursue formal dispute resolution, the reported average cost was \$130,000 per dispute,¹⁶ an amount that would cause financial strain to many small businesses.

Other studies on legal need have focused on information provision. For example, a study funded by the Australasian Institute of Judicial Administration focusing upon information provision in family law disputes found that people involved in parenting disputes 'struggled to negotiate the complex legal information environment, including identifying and reconciling different sources of information'.¹⁷ Participants in that study also reported that even if they obtained formal legal advice, they did not rely on it, did not feel it was accessible, and overall formal advice was ranked fairly evenly in the participants' minds with non-personalised but more accessible advice found online.¹⁸ However, participants greatly favoured personalised interactions over online sources, but again ranked formal sources such as advice lines similarly with the utility of speaking to friends and colleagues.¹⁹

III RESPONDING TO CIVIL JUSTICE NEEDS — FOUR WAVES OF ACCESS TO JUSTICE

In early 2019 the New South Wales Government established an *Access to Justice Innovation Fund*, seeking innovative solutions from not only legal professionals but 'community groups, creative and digital agencies, and social entrepreneurs', to access to justice problems.²⁰ Similarly, the Victorian Legal Services Grants Program, which traditionally supported a range of programs designed to advance access to justice, focused its 2019 round on innovation and technology, funding technological solutions

¹³ Chief Justice Wayne Martin, 'Creating a Just Future by Improving Access to Justice' (Address, Community Legal Centres Association Western Australia, 24 October 2012) 3.

¹⁴ Australian Small Business and Family Enterprise Ombudsman, *Access to Justice: Where do Small Businesses Go?* (Report, 2018) 21.

¹⁵ *Ibid* at 15.

¹⁶ *Ibid* at 17.

¹⁷ Jonathan Crowe et al, "I'll just Google that!" Online Searches and the Post-Separation Family Law Information Experience' (2019) 44 *Alternative Law Journal* (advance).

¹⁸ Jonathan Crowe et al, 'Bargaining in the Shadow of the Folk Law: Expanding the Concept of the Shadow of the Law in Family Dispute Resolution' (2018) 40(3) *Sydney Law Review* 319, 330.

¹⁹ *Ibid* 331.

²⁰ 'A Civil Justice Action Plan for New South Wales: Factsheet — December 2018', *New South Wales Department of Justice* (Web Page, December 2018) 1
<<https://www.justice.nsw.gov.au/lfb/Documents/LSB/civil-justice-strategy-fact-sheet.pdf>>.

to access to justice problems impacting Victorian communities.²¹ However, even before the advent of technological solutions, governments have long sought mechanisms to overcome cost and other access barriers.

In his magnum opus on access to justice, Cappelletti describes the evolution of these mechanisms as being like waves in the access to justice movement.²² The first wave, emerging in the 1960s, was the creation of legal aid schemes to allow litigants of limited financial means to access legal services. As Justice Ronald Sackville explains; in Australia it was not until mid-1970s that the Whitlam Government established the Australian Legal Aid Office, and established legal aid as a government concern, albeit one that was subsequently taken over by state governments.²³ The limitations of legal aid, however, are well documented — including an inevitable lack of adequate resources to provide access for all. At the time of the 2013 Productivity Commission Report, only 8 per cent of households met the income and asset test for legal aid, 'leaving the majority of low and middle-income earners with limited capacity for managing large and unexpected legal costs'.²⁴

Cappelletti's second wave reflects the paradox of many legal rights — that they are relatively low value, so as to make individual enforcement unlikely due to an inefficient use of resources. But at a societal level these disputes are significant and impact large numbers of people. This is known as the problem of 'diffuse interests':

The basic problem they present — the reason for their diffuseness — is that either no one has a right to remedy the infringement of a collective interest or the stake of any one individual in remedying the infringement is too small to induce him or her to seek enforcement action.²⁵

Consumer disputes represent a classic example of diffuse interests. As the Legal Need Study identified, they are routine transactions for most people, and are the most likely category of legal issue that people are likely to encounter, with over 20 per cent of the surveyed participants indicating that they had experienced a consumer issue in the last year.²⁶ Further, the study notes, consumer disputes tend to more disproportionately impact those already experiencing socioeconomic disadvantage: '[A]ge, disability status and education were the strongest significant predictors of experiencing consumer problems, and main language, employment status, family status, main income and gender were also significant'.²⁷

The primary response of the justice system to the diffusion problem is to establish procedural rules to assist with procedural barriers to representing diffuse interests, such as modifying the civil procedure rules of standing, and facilitating the pursuit of rights that belong to a group rather than an individual. In Australia, these have included mechanisms for class actions, the use of ombudsmen, as well as allowing

²¹ 'Victorian Legal Services Board Grants Program: 2019 Funding Round Open', *Victorian Legal Services Board* (Web Page, 6 December 2018) <<http://lsbc.vic.gov.au/?p=6259>>.

²² Mauro Cappelletti, 'Alternative Dispute Resolution Processes within the Framework of the World-Wide Access-to-Justice Movement' (1993) 56(3) *Modern Law Review* 282, 283.

²³ Justice Ronald Sackville, 'Some Thoughts on Access to Justice' (2004) 2(1) *New Zealand Journal of Public and International Law* 85, 91.

²⁴ Australian Productivity Commission 2014 (n 12).

²⁵ Cappelletti and Garth, 'The Newest Movement' (n 2) 194.

²⁶ *Legal Need Study* (n 8) 59.

²⁷ *Ibid* 73.

public interest matters to be pursued under the fiat of the Attorney-General as ‘guardian of the public interest’ in a process known as a relator action.²⁸ The advantages but also the many shortcomings of both of these instruments are now well documented — in the case of a relator action, they are seldom used, and the giving of a fiat is a non-reviewable exercise of the Attorney-General’s discretion. Mantziaris writes:

Relator actions are idiosyncratic ... proceedings are conducted by counsel for the relator upon the undertaking that the relator will indemnify the Attorney-General against any cost order and that it will observe any limitation upon the submissions to be made. In law, the relator proceeding is treated as an action conducted and controlled by the Attorney-General rather than the relator.²⁹

Class actions in Australia have been the subject of an Australian Law Reform Commission inquiry in 2018.³⁰ The Final Report was critical of many aspects of class actions as they have evolved, including the involvement of litigation funders changing the dynamic of a class action and impacting the essential features of class action litigation.³¹

Ombudsmen should be considered the triumph of the ‘second wave’ and the unsung heroes of the Australian civil justice system. The first ombudsman office was established in Western Australia in 1971, and by the end of the millennium had spread to 9 different ombudsmen around the country, at both state and federal level.³² Twenty years on there are well over 20 ombudsmen, both publicly-funded and industry-funded, all with different remits and powers.³³ While the operation of each role is subject to its own policies and procedures, typically ombudsmen have investigative and reporting powers, and a civil dispute resolution mandate that will allow them to assist consumers with grievances against government departments or businesses under their jurisdiction. Resolution suggestions made by an ombudsman will typically be non-binding on the consumer but depending on the scheme may be binding rather than advisory for the business. Ombudsman schemes are a relatively low-cost method of offering access to justice for a high volume of consumer disputes — for example, the Telecommunications Ombudsman was established in 1993 as an independent organisation funded through compulsory contributions from telecommunications businesses.³⁴ In 2017-2018, the Telecommunications Ombudsman processed over 160,000 complaints, primarily from residential customers, with a median complaint value of \$429, and commenced over 17,000 conciliations. Over two thirds of resolutions involved a financial outcome of some kind for the consumer.³⁵

²⁸ Christos Mantziaris, ‘The Federal Division of Public Interest Suits by an Attorney-General’ (2004) 25(2) *Adelaide Law Review* 211.

²⁹ *Ibid* 218.

³⁰ Australian Law Reform Commission, *Integrity, Fairness and Efficiency — An Inquiry into Class Action Proceedings and Third-Party Litigation Funders* (Report No 134, 2018).

³¹ *Ibid* 153-177.

³² Dennis Pearce, ‘Ombudsmen in Australia’ in Rob Gregory and Philip Gidings (eds) *Righting Wrongs: The Ombudsman in Six Continents* (IOS Press, 2000) 93, 93.

³³ See, eg, ‘Industry Ombudsmen & Dispute Resolution’, *Australian Competition and Consumer Commission* (Web Page) <<https://www.accc.gov.au/contact-us/other-helpful-agencies/industry-ombudsmen-dispute-resolution>>.

³⁴ ‘About Us’, *Telecommunications Industry Ombudsman* (Web Page) <<https://www.tio.com.au/about-us>>.

³⁵ Telecommunications Industry Ombudsman, *Annual Report 2017-2018* (Report, 2018) 14.

The ‘Third Wave’, at the time of Cappelletti and Garth’s writing, was emerging as new ways to ‘relate and adapt the civil process to the type of dispute’ and the recognition that ‘traditional contentious litigation in court ... might not be the best possible way to provide effective vindication of rights’.³⁶ In other words this third wave represented a shift of emphasis, acknowledging that courts should not necessarily be the dominant institutions for the resolution of civil disputes. Cappelletti and Garth emphasise the need for civil justice processes to be proportionate to what is required in an individual dispute; a concept that is now recognised in the litigation context in most Australian civil procedure rules as the ‘overriding purpose’.

This third wave has therefore seen not only an expansion of tribunals directed towards simplifying processes to reduce costs and the need for legal representation but, importantly, legislated support for mediation or conciliation as a precondition to adjudication of the issues. The *Consumer, Trader and Tenancy Tribunal Act 2001* (NSW) had an object of enabling proceedings to be determined in an ‘informal, expeditious and inexpensive manner’.³⁷ Its successor, the New South Wales Civil and Administrative Tribunal, sought to ‘resolve the real issues in proceedings justly, quickly, cheaply’.³⁸ Case management within the courts was also subject to the same imperative. Part 6 of the *Civil Procedure Act 2005* (NSW) included provisions granting the courts broad discretionary powers to ‘facilitate the just, quick and cheap resolution of the real issues in the proceedings’.³⁹ The Act also directs courts to consider the proportional relationship between the ‘importance and complexity of the subject-matter in dispute’ with the costs of the proceedings.⁴⁰ The Uniform Civil Procedure Rules also contain extensive powers for courts to refer parties to external dispute resolution providers where it is considered appropriate. By doing so, the courts help to facilitate access to justice by diverting away cases not needing judicial attention and freeing court time for those cases where litigation is of real individual or systemic value.

Since the time of Cappelletti and Garth’s original analysis, much has changed. This is due in large part to post-1970, third wave attempts to improve access to civil justice through the establishment of alternative dispute mechanisms that effectively sparked a movement towards use of technology. While Susskind focusses on the prospects for legal careers and the future nature of legal practice, his observations are equally relevant to the future of access to justice. We argue that the same factors identified by Susskind as precipitating an ‘evolve or perish’ imperative also represent a fourth wave of access to justice. Specifically, Susskind identifies that disruptive legal technologies can replace ‘mundane legal work’, that legal services will become unbundled and commoditised, and that ‘new ways of sourcing will emerge and these will often be combined in the conduct of individual pieces of legal work’ known as ‘multi-sourcing’.⁴¹ He also points to legal consumers sharing and recycling legal work, and only sourcing bespoke advice when it is absolutely required.⁴² The flipside for access to justice is this — a diverse ecology of technologically-driven, primarily online service

³⁶ Cappelletti and Garth, ‘The Newest Movement’ (n 2) 225.

³⁷ *Consumer, Trader and Tenancy Tribunal Act 2001* (NSW) s 3, as repealed by *Civil and Administrative Tribunal Act 2013* (NSW) s 3.

³⁸ *Civil and Administrative Tribunal Act 2013* (NSW) ss 3, 36.

³⁹ *Civil Procedure Act 2005* (NSW) s 56.

⁴⁰ *Ibid* s 60.

⁴¹ Susskind (n 3) 270–3.

⁴² *Ibid*.

providers, both public and private, delivering legal services that no longer rely on costly individual human intervention. Some current manifestations of this fourth wave are set out in Part IV below.

IV RIDING THE FOURTH WAVE — TECHNOLOGICAL CHANGE IN CIVIL JUSTICE

In this section we set out a number of case studies to illustrate the scope of the fourth wave of access to justice. The field of legal technology has changed rapidly — for example, in a cutting edge symposium published in the *Harvard Journal of Law and Technology* in 2012, technological advances of that time included court and legal aid websites (mostly text albeit with data management systems and standard classification technology behind them),⁴³ mobile and search engine optimisation to make material more accessible, and an increasing focus on multimedia content. Other innovations at that time included remote assistance via live online chat or forums, and the emergence of interactive, question-based assembly of court documents through technology such as A2J Author and self-validating smart forms.⁴⁴ In a very short space of time, there has been a veritable explosion of new companies, initiatives and technologies, making a comprehensive analysis impossible. Instead, our emphasis is on a survey of innovations that have the potential to greatly impact access to justice in civil disputes.

A *Technological Advancements in Conventional Service Delivery*

This category of fourth wave initiative focusses on existing public service providers such as courts offering new ways of delivering conventional services. For example, in many jurisdictions e-Courts have become commonplace, as have electronic filing and online call-overs. Sourdin categorises this as ‘supportive justice technology’.⁴⁵ Other types of technology include audio-visual links, which help minimise attendance costs for some types of proceedings, and as a result in New South Wales over 70 per cent of court appearances now take place by video link.⁴⁶ Electronic discovery and electronic data rooms have become commonplace in complex litigation.⁴⁷

B *Technologies to Better Distribute Conventional Legal Information*

Perhaps the greatest promise of technology is its potential to democratise law by narrowing the gap between experts and non-experts and facilitating self-help. There is nothing new about the idea of websites and self-help centres providing user-friendly, free or low cost online tools like court forms, videos and legal information. In America, state-wide websites like LawHelp by Pro Bono Net were developed to specifically to

⁴³ Jane Ribadeneyra, ‘Web-Based Legal Services Delivery Capabilities’ (2012) 26(1) *Harvard Journal of Law & Technology* 246, 248.

⁴⁴ *Ibid* 251.

⁴⁵ Tania Sourdin, ‘Justice in the Age of Technology: “The Rise of Machines is Upon Us”’ [2017] (139) *Precedent* 4, 4.

⁴⁶ ‘\$19.3 million technology boost for NSW Courts’, *New South Wales Department of Justice* (Web Page, 26 June 2017) <<https://www.justice.nsw.gov.au/Pages/media-news/media-releases/2017/technology-boost-for-nsw-courts.aspx>>.

⁴⁷ See, eg, ‘Litigation using Electronic Discovery’, *Federal Court of Australia* (Web Page) <<http://www.fedcourt.gov.au/law-and-practice/practice-documents/practice-notes/gpn-tech/electronic-discovery>>.

address access to justice concerns in the wake of shrinking legal aid budgets.⁴⁸ In Australia, a free domestic violence website, Ask LOIS, was launched by the Women's Legal Service NSW in 2012.⁴⁹ Ask LOIS provides free legal online resources and information for issues relating to family law, divorce, and domestic and family violence. Some of the free educational tools include free online monthly workshops, a resource library, case studies and a domestic violence service directory.⁵⁰

Legal advice can also be provided in 'kit' form, where technology is largely used to disseminate free advice to a large audience — as opposed to the advice being delivered in a technological form per se. For example, a recent collaboration between The Law School at the University of Newcastle (UON), University of Technology Sydney (UTS) and the NSW State Government developed and launched an online first-in-class support kit to aid lawyers in identifying and combating elder abuse.⁵¹ This kit was distributed in soft copy (.pdf format) as well as paper copy.

There is also a tendency to convert legal information into a standalone app. While there is a great deal of variation in the content of different apps, they all can be accessed directly from a user's mobile phone or other device, avoiding the need to use a search engine or remember the name of the service. For example, Penda is a free app developed by the Women's Legal Service Queensland (WLSQ) in collaboration with the Financial Rights Legal Centre with Funding from Financial Literacy Australia, to support victims of domestic family violence by providing free 'financial, person safety and legal information' along with nationwide referrals.⁵² Penda was launched with much fanfare at the Parliament House in 2017, with hopes that it will help break the cycle of domestic and family violence.⁵³

C *Unbundled Generators of Legal Documentation*

The unbundled service model, which is a focus of Susskind's work,⁵⁴ disaggregates the steps in the lawyer-client relationship, allowing the possibility of clients completing part of the required work themselves, and greatly reducing the cost of pursuing their civil matter.⁵⁵ There is wide variation on how unbundled services are delivered and enabled through technology. For example, it can allow potential litigants to seek general strategic advice, from a paid or pro bono service, but undertake drafting work themselves. Legal document generators such as LawHelp and A2J accelerate the

⁴⁸ Ribadeneyra (n 43).

⁴⁹ 'Ask LOIS', *Women's Legal Service NSW* (Web Page) <<https://www.wlsnsw.org.au/training/ask-lois-website/>>.

⁵⁰ Ibid.

⁵¹ Ben Murphy, 'Legal toolkit launches to combat elder abuse' (28 March 2019) *Newcastle Weekly* 20; 'First-of-its-kind resource aids legal practitioners in identifying elder abuse', *The National Tribune* (Web Page, 21 March 2019) <<https://www.nationaltribune.com.au/first-of-its-kind-resource-aids-legal-practitioners-in-identifying-elder-abuse/>>; 'First-of-its-kind resource aids legal practitioners in identifying elder abuse', *University of Newcastle: Newsroom* (Web Page, 20 March 2019) <<https://www.newcastle.edu.au/newsroom/featured-news/first-of-its-kind-resource-aids-legal-practitioners-in-identifying-elder-abuse>>.

⁵² Women's Legal Services QLD, 'Penda App Launched at Parliament House, *Penda* (Web Page, 12 September 2017) <<https://penda-app.com/2017/09/12/penda-app-now-available-for-download/>>.

⁵³ Ibid.

⁵⁴ Susskind (n 3).

⁵⁵ Raymond H Brescia et al, 'Embracing Disruption: How Technological Change in the Delivery of Legal Services Can Improve Access to Justice' (2014–15) 78(2) *Albany Law Review* 553, 564.

production of legal documents and reduce the need for a lawyer to develop a full understanding of the client's legal issues. The client can create their own legal document simply by filling in an online form. In Australia, the Consumer Action Law Centre assists potential litigants by using a guided form to generate a letter of complaint to the litigant's financial services provider. The guided form also generates a letter of demand for a refund to target 'sham' insurance companies that offer ineffective extended warranties.⁵⁶

Technology often provides a tangible financial benefit for those seeking civil justice, particularly when recovery amounts outweigh legal fees. It can also lead to the client having the best of both worlds by remaining in control of their own legal matter at the same time as obtaining small discrete segments of legal representation when it is most needed. For example, as early as 2009, the website LawHelp Interactive 'generated more than 145,000 forms' for pro bono solicitors, legal aid advocates and self-represented individuals in the United States.⁵⁷ Legal services are also being segmented and 'unbundled' in technological offerings from specialists to law firms and in-house lawyers. The traditional focus has been on legal precedents and information, but new start-ups like the UK startup FromCounsel_, are focusing on using a greater level of AI to supplement expert legal counsel advice.⁵⁸

In Australia, legal services provider Plexus offers a subscription-based service called Promotion Wizard that allows companies running promotions to generate customised terms and conditions via an interactive module. In addition to generating terms and conditions, the service also generates documentation to apply for the correct state -or territory- based permits.⁵⁹ Plexus also has a partnership with the Victorian Department of Justice, creating rule based expert systems to help community lawyers process youth justice cases.⁶⁰ These services are based on branched decision making using automation software.⁶¹ This is generally seen as a precursor to genuine machine learning that many consider the foundation for AI.

In each of these examples, the end user is able to generate legal documents without requiring detailed knowledge of the relevant laws or needing to clearly understand how their individual situation correlates with the law. These technologies are reliant to varying degrees on the user understanding and correctly interpreting their situation, and inputting it correctly, meaning that there are threshold barriers for potential litigants to make use of the technology. While these services can be greatly empowering to some people, others who are on the wrong side of the 'digital divide' (discussed below) will struggle to benefit.

⁵⁶ See 'Resources and Toolkits', *Consumer Action Law Centre* (Web Page) <<https://consumeraction.org.au/resources-and-toolkits/>>.

⁵⁷ 'About Us', *LawHelp* (Web Page) <<https://www.lawhelp.org/about-us>>.

⁵⁸ 'Product', *FromCounsel_* (Web Page) <<https://www.fromcounsel.com/product.html>>.

⁵⁹ 'Promotion Wizard', *Plexus* (Web Page) <<https://www.plxs.com.au/promotion-wizard/>>.

⁶⁰ 'Plexus Gateway', *Plexus Gateway* (Web Page) <<https://legalgateway.co/general/plexus-impact>>.

⁶¹ Andrew Mellett, 'Legal A.I.: High on Artificial, Low on Intelligence', *Plexus* (Web Page, 17 November 2017) <<https://www.plxs.com.au/legal-a-i-high-on-artificial-low-on-intelligence/>>.

D *Chat Bots, 'Big Data', and Artificial Intelligence-Driven Technology*

The advent of smart phones has also opened other opportunities for mobile apps to increase access to justice using AI.⁶² AI is a broad category that can include natural language processing to answer questions (as in the technology, or Alexa, or Siri), several variants of machine learning, through to robotics. One of the most sophisticated examples of usable AI today is Google Duplex, an intelligent voice activated assistant that can make phone calls and interact with callers at the other end.⁶³ In the USA, the chatbot AI-powered legal counsel app, DoNotPay stands as the benchmark civil action legal app used to 'sue anyone by pressing a button'.⁶⁴ Initially it was the brainchild of 18 year old Joshua Browder who created the app to tackle parking tickets.⁶⁵ Today it claims to offer nationwide legal advice in the United States aimed at protecting individual rights against a range of corporate and state violations such as unfair pricing practices, breaches of data and privacy laws, and the issuance of unfair bank fees.⁶⁶

The legal apps field is expected to develop rapidly. Examples include the JustFix.nyc app, which connects tenants with legal and support services when facing difficulties dealing with neglectful landlords,⁶⁷ and the RightsNOW app, which is designed to provide real-time legal information by a verbal answer to a spoken question.⁶⁸ In much the same way, the Google search function is being transformed by AI through automatic analysis of web content and machine learning.⁶⁹ AI is expected to play a growing role in these legal apps, although at the present time, much of what is touted as AI is not what consumers might expect, and some is more aptly described as marketing hype.

The use of technology by government agencies, courts and tribunals can potentially reduce the cost of providing existing labour-intensive services, and allow savings to be diverted to provision of additional services to fill the access to justice gap. This increase in access to justice through technological efficiencies can be expected to grow significantly. However, it will not be without controversy, especially to the extent governments show increased reliance on use of algorithms, 'big data' and AI to assist in decision making.⁷⁰ This will be discussed further below.

⁶² Lois R Lupica, Tobias A Franklin and Sage M Friedman, 'The Apps for Justice Project: Employing Design Thinking to Narrow the Access to Justice Gap' (2017) 44(5) *Fordham Urban Law Journal* 1363, 1385.

⁶³ Jeffrey Grubb, 'Google Duplex: A.I. Assistant Calls Local Businesses To Make Appointments' (YouTube, 8 May 2018) <<https://www.youtube.com/watch?v=D5VN56jQMWM>>.

⁶⁴ Jon Porter, 'Robot lawyer DoNotPay now lets you "sue anyone" via an app', *The Verge* (Web Page, 10 October 2018) <<https://www.theverge.com/2018/10/10/17959874/donotpay-do-not-pay-robot-lawyer-ios-app-joshua-browder>>.

⁶⁵ *Ibid.*

⁶⁶ *Ibid.*

⁶⁷ See 'About Us', *justfix.nyc* (Web Page) <<https://www.justfix.nyc/our-mission>>.

⁶⁸ See 'Our Product', *RightsNOW* (Web Page) <<https://www.rightsnowapp.com/our-product>>.

⁶⁹ Cade Metz, 'AI is transforming Google Search. The rest of the web is next', *Wired* (News Article, 4 February 2016) <<https://www.wired.com/2016/02/ai-is-changing-the-technology-behind-google-searches/>>.

⁷⁰ Julia Dressel and Hany Farid, 'The Accuracy, Fairness, and Limits of Predicting Recidivism' (2018) 4(1) *Science Advances* 1.

E Automation Platforms

A final category of technological innovation is that of automation platforms, which provide services to institutions that advance access to justice, but typically do not engage in the provision of any legal services. Drupal is an open source content management platform that is used by a range of for-profit institutions. Drupal has led to the creation of DLaw, an open source code but subscription-based library for the creation of public information websites such as Legal Aid websites. The service increases the level of appeal of websites and enhances their useability for a range of users without the need for technical programming expertise, meaning that legal information providers with even a basic level of knowledge can increase access to legal information by providing mobile-friendly and disability-accessible information.⁷¹

An additional level of sophistication is offered by the Australian innovation Josef, an automation platform that is available to both law firms and pro-bono service providers and provides the tool for non-technologically minded lawyers to create chatbots. As the founders of Josef explain, ‘the builder allows any legal organisation or community legal centre to build their own chatbot based on their area of expertise and then once they’ve built they can launch it themselves without the need for a developer or any coding experience’.⁷² Health Complaints Assist is one example of a platform built using this technology. It was created and funded by a Melbourne-based health law firm and could be considered as a part pro-bono and part marketing exercise.⁷³

V CORE CONSIDERATIONS FOR BETTER ACCESS TO JUSTICE

The previous parts of this article have set out the possibilities that technology can offer to advance access to justice. In this Part we offer a critical examination of three important and distinct challenges that technology presents for the genuine advancement of access to justice. As indicated in the introduction above, it is widely accepted that access to justice encompasses both procedural and substantive justice — so it is not enough to offer more people the chance to seek redress in the civil justice system if the results do not maintain a satisfactory level of integrity and accuracy. Conversely, accurate results from a technical perspective cannot be achieved if those results are achieved in an untimely way, at great expense, or in a way that is not accepted by society or consistent with human rights frameworks.

With these goals in mind, we identify two key challenges that must be met in order to deliver access to justice imperatives — digital inclusivity and algorithmic justice. We then discuss two technological solutions that assist in facilitating this — black box tinkering and inclusive human-centred design. We set out each of these in turn below.

⁷¹ ‘Websites’, *OpenAdvocate* (Web Page) <<https://openadvocate.org/websites/>>.

⁷² George Nott, ‘Legal chatbot builder Josef making justice more accessible’, *Computerworld* (News Article, 7 June 2018) <<https://www.computerworld.com.au/article/642083/legal-chatbot-builder-josef-making-justice-more-accessible/>>.

⁷³ See ‘Reporting Healthcare Complaints’, *Health Complaints Assist* (Web Page) <<https://healthcomplaintsassist.com.au/>>.

A Challenge 1: Digital Inclusivity

Critics of legal technology often argue that proponents ignore challenges faced by users in adopting and adapting to legal tech innovations. These barriers include cost, digital exclusion, and trust. The digital divide severely impacts the impact of technological solutions in communities where they are most needed. For example, older people, people with disabilities, indigenous people, people from lower socioeconomic communities, rural and remote communities, and people for whom English is a second language, represent both groups of acute legal need but also the least capable of accessing digital services. Simply having access to a device or internet connection is also insufficient. There is a question of how more vulnerable groups have the time, language skills and even mental bandwidth to deal with complex information in a digital environment. Studies identifying the phenomenon referred to as ‘mental bandwidth’ define it as ‘the amount of space available in one’s head for processing’.⁷⁴ These studies have discovered that those living with high levels of financial stress or living in poverty show decreased ability to cognitively process additional or new information. As such, technological advancements must be those that take into consideration the sociological challenges faced by end users.

In October 2018, the Law Council of Australia was commissioned by the Australian Human Rights Commission to produce recommendations to government, community and business on aspects relating to human rights and technology.⁷⁵ In the Report titled *Human Rights and Technology*, the Law Council of Australia voiced concerns that ‘unequal access to technologies can exacerbate inequalities, especially where access is affected by factors such as socio-economic status, geographical location and cultural or linguistic diversity’.⁷⁶ Perhaps the most telling comments were these:

...technological innovations can affect societal inequality ...A key concern identified by Justice Project stakeholders was that policymakers frequently overlook the realities of target groups’ digital exclusion (and underlying language and literacy barriers), in their overreliance on online solutions at the expense of more effective and targeted strategies.⁷⁷

Underlying this Report was the recognition that the voices of ‘target groups’ were being ignored. However, gathering data on key groups is problematic. For example, there is often limited information on the digital literacy of users of legal services,⁷⁸ and the diverse needs of disabled users and non-neurotypical users is still poorly featured in technological developments.

⁷⁴ The term ‘mental bandwidth’ has been popularised in mainstream media and used loosely. It is, however, a technical term used in the field of psychology and sociology: see, eg, Avik Basu, Jason Duvall and Rachel Kaplan, ‘Attention Restoration Theory: Exploring the Role of Soft Fascination and Mental Bandwidth’ (2018) *Environment and Behaviour* (advance).

⁷⁵ Law Council of Australia, Submission to Australian Human Rights Commission, *Human Rights and Technology* (25 October 2018).

⁷⁶ Ibid 6.

⁷⁷ Ibid.

⁷⁸ See Tania Sourdin and Naomi Burstyner, ‘Justice Delayed Is Justice Denied’ [2014] (4) *Victoria University Law and Justice Journal* 46, 54–5; researchers have also found that in New South Wales, the court database, ‘JusticeLink’ did not even identify the number of self-represented litigants: Suzie Forell et al, *Data Insights in Civil Justice: NSW Supreme Court* (Report, October 2018) 13.

In response to this, research is starting to identify and track digital exclusion impacts on legal technology introductions and advances. Digital exclusion relates to a group or an individual's ability to access, use and interact with digital technology. Recognition that digital exclusion, literacy and accessibility is becoming a global concern is evidenced by the growth in global reports tracking digital exclusion — such as the Lloyds Bank UK Consumer Digital Index and the Australian Digital Inclusion Index, both of which seek to identify barriers to a user's digital availability, affordability, relevance and readiness.⁷⁹

In 2018, the Australian Digital Inclusion Index produced a Report titled *Measuring Australia's Digital Divide: The Australian Digital Inclusion Index 2018*.⁸⁰ In that Report, it was found that whilst Australia had made some inroads over the years, more work was needed.⁸¹ They reported that the most digitally excluded groups included (in ascending order) 'low income households (41.3), mobile-only users (42.7), people aged over 65+ (46.0), people who did not complete secondary school (47.4) and people with disability (49.2)'.⁸²

There were also substantial differences between rural and urban areas, particularly for Indigenous Australians.⁸³ Other research has suggested that a lack of digital literacy skills can result in high levels of vulnerability within groups, including fundamental human rights concerns such as restrictions on the ability of members within these groups to vote and obtain gainful employment.⁸⁴

Some aspects of digital inclusivity may improve over time. For example, the number of individuals with access to affordable internet continues to increase, as the price of devices and network access decreases. This allows technology to become more accessible to marginalised groups. However, care needs to be taken to ensure that these groups, already identified as being amongst the most likely to experience civil disputes significantly impacting their lives,⁸⁵ can locate, discriminate between, and apply information and advice that they require. Hough points out that online services have to be created in a variety of formats for individuals with differing technological abilities.⁸⁶

Hough's work also articulates the spectre of 'a digital divide that institutionalizes a two-tiered system incapable of delivering appropriate justice to low-income persons'.⁸⁷ There is an argument that mainstreaming of digital resources will allow this two-tiered system to emerge even more strongly as market forces impact the legal profession.⁸⁸ As technological options expand, we can expect that the pool of lawyers

⁸⁰ See, eg, *Lloyds Bank UK Consumer Digital Index 2019* (Report, 2019).

⁸⁰ Julian Thomas et al, *Measuring Australia's Digital Divide: The Australian Digital Inclusion Index 2018* (Report, 2018).

⁸¹ *Ibid.*

⁸² *Ibid* 6.

⁸³ *Ibid.*

⁸⁴ Amy Antonio, 'Democratising the Digital Divide: Civics and Citizenship Curriculum, Australian Aboriginal Communities and Social Media' (2013) 31(1) *The Social Educator* 35, 39.

⁸⁵ *Legal Need Study* (n 8).

⁸⁶ Bonnie Rose Hough, 'Let's Not Make It Worse: Issues to Consider in Adopting New Technology' (2012) 26(1) *Harvard Journal of Law & Technology* 256, 260.

⁸⁷ *Ibid* 257.

⁸⁸ See, eg, Mark Lloyd, 'The Digital Divide and Equal Access to Justice' (2002) 24(4) *Hastings Communications and Entertainment Law Journal* 505, 525-8.

providing face-to-face legal advice to clients will shrink due to forces of supply and demand. As the legal profession contracts, the digital divide will increase in the sense that the elite, well-connected and wealthy will retain access to human lawyers, with others relying on online information and potentially AI to meet our legal needs.⁸⁹

B Challenge 2: Algorithmic Bias and the Algorithmic Justice Movement

Algorithms provide the processes or rules to enable machine learning and AI.⁹⁰ Algorithms are often discussed in terms of their capabilities to detect online social or preference patterns, such as when viewers watch a YouTube video and similar or related videos are suggested on the sidebar.⁹¹ Algorithms have also been used for facial recognition purposes ranging from opening an iPhone to judging a beauty contest.⁹² Algorithms are often viewed as an access to justice panacea. As it relates to legal practice, algorithms power AI developments to create ‘smart contracts’ based on block chain technology that are described as automated contingency contracts based on “‘if-then’ statement’.⁹³ In Australia, smart contracts are a reality, having already come into use by companies like AgriDigital, who piloted the ‘world’s first ever sale using a pilot blockchain ledger and smart contract code’.⁹⁴

Algorithms have also been used to automate due diligence for property and merger and acquisition work. Recently Allens’ innovative award-winning Real Estate Due Diligence App (REDDA) used AI to simplify due diligence for real estate leases.⁹⁵ This was heralded by the then Allens’ Chief Legal & Technology Services Officer Beth Patterson as providing ‘...real-time access to flagged issues, faster turnaround and greater efficiency in a large matter’.⁹⁶ Given these developments are relatively new, there is currently little case law or legislation in place. However, commentators agree that like any other legal aspect, applicable laws will guide disputes arising from the use of smart contracts and due diligence apps.⁹⁷ Concerns often arise, however, as to which parties will straddle the cost and responsibility burden when algorithmic breakdowns occur.

⁸⁹ Nellie Bowles, ‘Human Contact Is Now a Luxury Good’, *The New York Times* (online, 23 March 2009) <<https://www.nytimes.com/2019/03/23/sunday-review/human-contact-luxury-screens.html>>

⁹⁰ An algorithm is defined as ‘a procedure for solving a mathematical problem ... in a finite number of steps that frequently involves repetition of an operation ... commonly used nowadays for the set of rules a machine (and especially a computer) follows to achieve a particular goal’: *Merriam-Webster* (online at 17 June 2019) ‘algorithm’ (def 2).

⁹¹ Amanda R Matos, ‘Can Algorithmic Justice Save Us From the Coming Artificial Intelligence Dystopia?’, *Feministing* (Web Page, 17 November 2017) <<http://feministing.com/2017/11/17/can-algorithmic-justice-save-us-from-the-coming-artificial-intelligence-dystopia/>>.

⁹² Sam Levin, ‘A beauty contest was judged by AI and the robots didn’t like dark skin’, *The Guardian* (online, 9 September 2016) <<https://www.theguardian.com/technology/2016/sep/08/artificial-intelligence-beauty-contest-doesnt-like-black-people>>.

⁹³ *Ibid.*

⁹⁴ Michael Bacha, ‘Smart contracts in Australia: Just how clever are they?’, *PiperAlderman* (Web Publication, 16 August 2017) <<https://www.piperalderman.com.au/publications/ip-technology-telecommunications/article/28836>>.

⁹⁵ Levin (n 92); see also Allens Linklaters, ‘REDDA Recognised at PCA Awards’ (Media Release, 14 May 2018).

⁹⁶ Allens Linklaters, ‘REDDA Recognised at PCA Awards’ (Media Release, 14 May 2018).

⁹⁷ Bacha (n 94).

Regardless of the possible costs, often bias impacts on how technology delivers justice. Algorithmic Bias refers to situations when one group or individual is unfairly favoured or discriminated over another. A great example of bias relates to the case between Vishal Vora and online retailer eBay. In 2014, the *Observer* reported on a case filed in the United Kingdom by Vishal Vora against eBay concerning the company's buyer return policy launched in 2013. Here, Vora claimed the return policy was biased against sellers, effectively encouraging increases in fraudulent claims.⁹⁸ Vora disclosed to the *Observer* that that on two occasions involving the sale of a Baby Bjorn bouncer and an iPhone, eBay had automatically refunded buyers without a proper assessment of claims, or evidence of damage.⁹⁹ In the case of the Baby Bjorn bouncer, Vora reported that he discovered evidence that the item was being used on social media despite claims otherwise by the buyer. This transpired to Vora who demanded the buyer return the item, only to have the buyer report him to the local police.¹⁰⁰ As a result, Vora ultimately took the buyer to court, at a cost of £70, only to be awarded £65.¹⁰¹ While Vora was able to settle out of court with eBay for an undisclosed amount for a refund involving the sale of the iPhone, the case of the Baby Bjorn bouncer highlights the perils of seeking civil remedies against individuals.¹⁰²

Algorithmic Bias not only occurs when the rules that form part of an algorithm in technology are inherently biased. It can also occur when new technology 'glitches' or fails to perform the required rules resulting in a bias, or worse, when there is a combination of both scenarios. In Australia, the 'Robodebt Scandal' involving Centrelink's automated computer system designed to detect welfare fraud, provides a possible example of the worst case scenario. In 2016, Centrelink developed and commenced use of a computer system that effectively sought to uncover welfare fraud and accidental overpayments by matching tax records to welfare payments.¹⁰³ The benefit of the system was that it removed a layer of human oversight, instead automatically generating letters of demand to welfare recipients that included explanations for any discrepancy between tax records and welfare records.¹⁰⁴ The efficiency of the system meant that Centrelink was able to detect and send letters in

⁹⁸ Anna Timms, "Sitting duck" eBay sellers take a stand against the scammers', *The Guardian* (online, 13 January 2019) <<https://www.theguardian.com/money/2019/jan/13/eBay-sellers-scams-buyer-protection>>.

⁹⁹ Ibid.

¹⁰⁰ Ibid.

¹⁰¹ Ibid.

¹⁰² Ibid.

¹⁰³ Shalailah Medhora, 'Over 2000 people died after receiving Centrelink robo-debt notice, figures reveal', *ABC Triple J Hack* (Web Page, 18 February 2019) <<https://www.abc.net.au/triplej/programs/hack/2030-people-have-died-after-receiving-centrelink-robodebt-notice/10821272>>; see also Anna Timms, 'When eBay goes wrong, who pays the price?', *The Guardian* (online, 17 February 2014) <<https://www.theguardian.com/money/2014/feb/17/eBay-goes-wrong-debt-collectors>>; Anna Timms, 'eBay accused of failing its sellers as fraudulent buyers manipulate the system', *The Guardian* (online, 21 May 2017) <<https://www.theguardian.com/money/2017/may/21/eBay-accused-failing-sellers-buyers-manipulate-system-protection>>.

¹⁰⁴ Shalailah Medhora, 'Over 2000 people died after receiving Centrelink robo-debt notice, figures reveal', *ABC Triple J Hack* (Web Page, 18 February 2019) <<https://www.abc.net.au/triplej/programs/hack/2030-people-have-died-after-receiving-centrelink-robodebt-notice/10821272>>.

respect of 20,000 discrepancies a week.¹⁰⁵ This far outweighed the old system where human oversight only identified some 20,000 discrepancies per year.¹⁰⁶

However, there were problems both with the algorithm used and the sudden ramping up of number of discrepancies found. A Senate Committee Report found ‘the system was so flawed that it was set up to fail’.¹⁰⁷ One of the algorithms used often falsely calculated debt as owing due to the averaging of taxable income over the year, instead of only reducing the amount of welfare payable at the times of the year the welfare recipient was earning more than the threshold amount.¹⁰⁸ Further, the sudden increase in debt letters resulted in millions of phone calls being unanswered as welfare recipients tried to contact Centrelink to discuss the alleged debt. Welfare recipients were therefore redirected to online resources that were not easily accessible or understandable to many people. It is therefore claimed some people paid the incorrect amount when they could properly have disputed it. Other people apparently had payments improperly stopped when they were unaware of the claim because the letter was sent to the wrong address, or when they were unable to speak to a staff member or understand the online resources they were redirected to.

As the highly automated system continued, many alleged debts were sold to private debt collectors with the onus on the debtor to prove the amount of debt calculated. This was a highly problematic outcome for a vulnerable population with the debt recovery system going back over a six year period despite online departmental advice that welfare recipients were only required to keep records for six months.¹⁰⁹ The Senate report found ‘this lack of procedural fairness disempowered people, causing emotional trauma, stress and shame’.¹¹⁰ The use of this automated process was strongly criticised for unfairly targeting a vulnerable segment of the population,¹¹¹ as well as breaching the Government’s model litigant policy by sending official demands for a debt based on a computer generated approximation instead of actual evidence.¹¹² Such claims have resulted in the Victorian Legal Aid filing a test case in the Federal Court of Australia in February 2019, on behalf of Ms Masterton against the Department of Human Services, the regulatory body at the heart of the Robodebt Scandal.¹¹³

Similar scenarios concerning failed algorithms have been identified also in criminal justice contexts, involving the use of machine learning and AI to assist judges. In the United States, there has been controversy over use of the Correctional Offender Management Profiling for Alternative Sanctions (‘COMPAS’) sentencing tool that uses

¹⁰⁵ Ibid.

¹⁰⁶ Ibid.

¹⁰⁷ Senate Standing Committee on Community Affairs, Parliament of Australia, *Design, Scope, Cost-Benefit Analysis, Contracts Awarded and Implementation Associated With the Better Management of the Social Welfare System Initiative* (Report, 21 June 2017) 107.

¹⁰⁸ Ibid.

¹⁰⁹ Ibid.

¹¹⁰ Ibid.

¹¹¹ Medhora (n 104).

¹¹² Paul Karp and Christopher Knaus, ‘Centrelink robo-debt program accused of enforcing “illegal” debts’, *The Guardian* (online, 4 April 2018) <<https://www.theguardian.com/australia-news/2018/apr/04/centrelink-robo-debt-program-accused-of-enforcing-illegal-debts>>.

¹¹³ Cameron Houston and Chris Vedelago, ‘Centrelink wipes “robo-debt” at centre of test case’, *The Sydney Morning Herald* (online, 5 May 2019) <<https://www.smh.com.au/national/centrelink-wipes-robo-debt-at-centre-of-test-case-20190505-p51kac.html>>.

AI and machine learning to predict the chance of recidivism.¹¹⁴ Another issue is the use of AI and data analysis for law enforcement. These criminal law examples are equally instructive for the civil justice context, where similar challenges arise. The use of this technology is growing rapidly but has largely escaped legal or political accountability to date.¹¹⁵ In NSW, for example, it was identified in the criminal law context that the algorithm used by law enforcement to select suspects was racially biased.¹¹⁶ Only 3 per cent of the State's population is Indigenous and yet despite this, of those chosen by the algorithm, more than 50 per cent were Aboriginal or Torres Strait Islander.¹¹⁷

One problem with machine learning is that the exact basis for the decision-making by the computer is often unclear to human operators. This creates a concern that rights to procedural fairness are breached because the algorithm on which the decision is made is not transparent.¹¹⁸ A second significant problem is concern about whether the decision-making is biased (perhaps due to machine learning from a biased data set),¹¹⁹ this concern being compounded by the lack of transparency of the basis for the decision.

The brief discussion above highlights the need for better oversight by the legal community into algorithmic process used in technology.¹²⁰ In the State of the Profession Address to the NSW Young Lawyers in Sydney on 21 September 2017, Justice Margaret Beazley commenced her speech by stating:

It goes without saying that law is not and will not be immune from the influence of the algorithm. The challenge for the legal system in general and the legal profession in particular is, I am going to suggest, twofold. First, there is the question of how to keep up to date with new technologies. And secondly, there is the question of how best to use technology to serve our clients and further the administration of justice. This second point is fundamental to the efficient and effective administration of the legal system...¹²¹

Justice Margaret Beazley observed that it was the duty of the legal system and legal practitioners to develop knowledge of emerging technology and not leave the development 'in the hands of technology experts'.¹²²

In other parts of the world, the University of Helsinki's Legal Tech Lab stands at the forefront of discussing questions of algorithmic fairness and justice by design, considering how the architecture of technology must import concepts of access, justice and fairness. They encapsulate the problem of algorithmic justice in the following terms:

¹¹⁴ Dressel and Farid (n 70).

¹¹⁵ Andrew G Ferguson, 'Policing Predictive Policing' (2017) 94(5) *Washington University Law Review* 1109, 1168–71.

¹¹⁶ *Ibid.*

¹¹⁷ Deven R Desai and Joshua A Kroll, 'Trust but Verify: A Guide to Algorithms and the Law' (2017) 31(1) *Harvard Journal of Law and Technology* 1, 23.

¹¹⁸ See, eg, *Loomis v Wisconsin*, 137 US 2290 (2017).

¹¹⁹ Osonde A Osoba and William Welser IV, *An Intelligence in Our Image: The Risks of Bias and Errors in Artificial Intelligence* (Report, 5 April 2017).

¹²⁰ Desai and Kroll (n 117).

¹²¹ Justice Margaret Beazley, 'Law in the Age of the Algorithm' (Address, State of the Profession New South Wales, 21 September 2017) 1 [2].

¹²² *Ibid* 2 [6].

It is not possible to understand automation bias simply from the perspective of legal scholarship, as this requires insight into how algorithms reflect structural biases of their training data and how such shortcomings could be avoided. For example, removing possibly discriminating factors is not sufficient and bias in the formal sense of computer science differs from the term's socio-legal meanings.¹²³

Avoiding algorithmic injustice is challenging, due largely to the inaccessible nature of technology for most non-experts. Desai and Kroll also caution the use of 'wild data,' stating systems using public data will require 'ongoing monitoring and evaluation' to ensure models remain accurate. This warning comes in the wake of Microsoft's failed Twitter chat-bot Tay. The benign system was initially designed with a teenage girl's persona but quickly became racist and foul-mouthed when fed information from online trolls.¹²⁴ In the legal tech sector, the 2016 Alameda County rolled out a new court case-management system, resulting in the wrongful arrest, imprisonment and forced registration as sex offenders of community members.¹²⁵

C Solution 1: Black Box Tinkering

Desai and Kroll call for technical accountability and make a case to suggest that the creators of technology should make known or publish algorithms so they can be analysed.¹²⁶ This may help in some situations, but Perel and Elkin-Koren warn that transparency of algorithms is insufficient of itself to ensure accountability. Simply publishing a coded and mathematically complex algorithm is not enough to meet the information needs of non-experts. Similarly, the disclosure of input and output data would only serve to produce vast quantities of information which is uninterpretable and incapable of scrutiny by the majority of the public.¹²⁷ Instead, Perel and Elkin-Koren propose a reverse engineering technique coined 'Black Box Tinkering', a method that would involve presenting an algorithm with different scenarios to reveal 'the [inner] blueprints of its decision making process'.¹²⁸

Unlike observational studies, Black Box Tinkering can reflect on more than just what is publicly disclosed, and also examine the practical workings of the algorithm. For example, a recent experiment using this tinkering method conducted by King, Pan, and Roberts on China's political censorship on social media platforms revealed that social media content was utilised in over 60 per cent of the sites under review. Consequently, the Chinese public now know their social media submissions are automatically targeted. This in turn allows the public to 'demand that algorithmic systems comply with public interests such as due process, equal protection, and freedom of expression'.¹²⁹ However, Black Box Tinkering is unlikely to be suited to all

¹²³ 'Legal Tech Lab: Research', *University of Helsinki Legal Tech Lab* (Web Page, 13 October 2018) <<https://www.helsinki.fi/en/networks/legal-tech-lab/research>>.

¹²⁴ Hannah Francis, 'Microsoft's teenage chatbot, Tay, turns into a racist, abusive troll', *The Sydney Morning Herald* (online, 25 March 2016) <<https://www.smh.com.au/technology/microsofts-teenage-chatbot-tay-turns-into-a-racist-abusive-troll-20160325-gnqvro.html>>.

¹²⁵ Margaret Hagan, 'Participatory Design for Innovation in Access to Justice' (2019) 148(1) *Daedalus* 120, 121 ('Participatory Design').

¹²⁶ *Ibid.*

¹²⁷ Maayan Perel and Niva Elkin-Koren, 'Black Box Tinkering: Beyond Disclosure in Algorithmic Enforcement' (2017) 69(1) *Florida Law Review* 181, 184-5.

¹²⁸ *Ibid.*

¹²⁹ *Ibid.*

types of AI, or to always provide the specificity needed for public confidence or procedural fairness.

This is of a special concern for software used by the Government in decision-making that may raise questions about the integrity of the Government's processes. It is advised that software is programmed to allow for the evaluation of applicable guarantees. It should be clear to competent observers that 'the evidence explain[s] both the goals of the system and the fact that it meets those goals'.¹³⁰ In the Australian context, the country's Chief Scientist has proposed the creation of a certification mark — a so called 'Turing Stamp' to indicate to consumers that a particular piece of technology uses algorithms that meet a benchmark level of ethical behaviour.¹³¹ However, from a computer science perspective, any requirement that would allow humans to be completely satisfied of a transparent algorithm and ability of the system to clearly meet its goals is likely to place limitations on use of systems based on machine learning, where the nature of the decision making is typically not easily explainable in human terms. This restriction may therefore seem unfeasible, and a realist would expect that the development of new technology will continue to outpace the regulation of the new technology.

D *Solution 2: Human-Centred Design: The Emergence of Legal Design*

It would be unthinkable to design a utilitarian object such as a chair without regard for the consumer, the end user for whom it is intended that the object will become a part of their daily lives. If the chair was intended to serve as a piece of assistive technology to help a physically frail person to stand up and sit down with greater ease, but the chair was actually more cumbersome to use than a regular chair, then it would be considered an outrageous failure. To those who approach the world from a design perspective, civil litigation would have to be considered an outrageous failure — while its expressed aim is to allow ordinary people to vindicate their rights, the system is designed to be used primarily by highly-skilled experts whose services are out of reach of the intended beneficiary of the system. There is thus a great deal of work to be done to ensure that the civil justice system is redesigned with the end user in mind.

Margaret Hagan, from the Stanford Legal Design Lab, was one of the first to coin the term Legal Design. Hagan defines it as a user focused ideology viewed as a process, mindset and set of mechanics to achieve human-centred design:

Legal Design is the application of human-centered design to the world of law, to make legal systems and services more human-centered, usable, and satisfying. Legal Design is a way of assessing and creating legal services, with a focus on how usable, useful, and engaging these services are. It is an approach with three main sets of resources — process, mindsets, and mechanics — for legal professionals to use. These three resources can help us conceive, build, and test better ways of doing things in law, that will engage and empower both lay people and legal professionals.¹³²

¹³⁰ Desai and Kroll (n 117).

¹³¹ Alan Finkel, 'What will it take for us to trust AI?', *World Economic Forum*, (News Article, 12 May 2018) <<https://www.weforum.org/agenda/2018/05/alan-finkel-turing-certificate-ai-trust-robot/>>.

¹³² Margaret Hagan, *Law by Design* (Open Law Lab, 2017) (*Law by Design*).

Technological innovation in the absence of Legal Design is fraught with risk.¹³³ Likewise, efforts to merely gather user-feedback in the absence of implementing a solution also have damaging implications,¹³⁴ leaving users frustrated as they attempt to navigate accessing justice. However, for years, legal systems have struggled to properly break down barriers to justice using human-centred design tools readily available, instead relying heavily on legal practitioners and government agencies to speak on behalf of users. This has caused advocates of Legal Design to observe that ‘new legal technologies and services, whether aiming to help people expunge their criminal records or to get divorced in more cooperative ways, have not been adopted by the general public. Instead, it is primarily lawyers who use them’.¹³⁵

Central to Legal Design is the mindset that users are key to innovating legal systems. This ideology fits with the basic access to justice tenets set out by the United Nations, where access to justice focuses on fulfilment of the rule of law, aimed at making the delivery of justice impartial and non-discriminatory.¹³⁶ In adopting that mindset, the Legal Design methodology becomes iterative involving ‘five main steps: understanding, synthesis, brainstorming and prototyping, testing and refinement’, where technology is one of many tools to achieve outcomes.¹³⁷

User insights have unfortunately not been a central feature of civil justice innovation, and testing and refinement is often done by experts rather than end users. The time taken to elicit proper user insights will impact on user adoption. For instance, a satellite-connected legal kiosk project in Arizona called *Computers that Speak of the Law* failed because the intended beneficiaries in Navajo and Hopi communities were not consulted in the process, resulting in the communities finding that the kiosks created for them were not sufficiently user friendly.¹³⁸ This lesson is reinforced by Salter and Thompson who emphasise that technology needs to take into account users throughout the entire process. They observe that

generally speaking, one of the biggest challenges in designing a justice system around the public is the necessary shift in emphasis away from the needs of people who provide justice processes towards the people who use them. There needs to be a rebalancing between the interests and perceptions of the people who work in the justice system, and the public for whom they work. This rebalancing requires a break with tradition.¹³⁹

As such, technology’s role in shaping solutions only plays a part when it can increase the effectiveness of user experience by simplifying, aiding or empowering the user to engage with the legal system. Alex Smith, the innovation manager of global law firm Reed Smith, was recently quoted saying: ‘[w]hile tech is exciting, it’s important to map

¹³³ Hagan, ‘Participatory Design’ (n 125).

¹³⁴ Julia Perry et al, *Access to Justice Roundtable: Proceedings of a Workshop July 2002* (Report, 2002).

¹³⁵ Hagan, ‘Participatory Design’ (n 125) 120.

¹³⁶ ‘Access to Justice’, *United Nations and the Rule of Law* (Web Page) <<https://www.un.org/ruleoflaw/thematic-areas/access-to-justice-and-rule-of-law-institutions/access-to-justice/>>.

¹³⁷ Hagan, *Law by Design* (n 132).

¹³⁸ Ibid.

¹³⁹ Salter and Thompson (n 4) 125.

and redesign the system properly... The people and process driving the justice system are probably more important in such sensitive areas as any technology'.¹⁴⁰

Legal Design is a new and exciting field for lawyers with an interest in access to justice. While it is still emerging as a distinct field of academic inquiry, Legal Design offers a structured method to encourage an iterative and user-focused process of law reform and innovation that allows for miscalculations and mistaken assumptions to be made and corrected before a purported solution is released to an end user. It offers the ability to integrate methods of information delivery that suit a range of users, for example through the integration of visual law. This allows for a greater understanding by ordinary people of their rights and obligations in contexts such as an employment contract.¹⁴¹

A second advantage of Legal Design thinking is that it explicitly embraces interdisciplinary thinking; another aspect of innovation that has often been overlooked in many parts of the civil justice system. As Holloway states:

...design thinking looks beyond the immediate boundaries of the problem to ensure the right question is being addressed. Using interdisciplinary teams, design thinking incorporates diversity and leverages different paradigms and tool sets from each profession to analyze, synthesize, and generate insights and new ideas. The interdisciplinary nature of design thinking also ensures that innovations are naturally balanced between the technical, business, and human dimensions.¹⁴²

The potential contribution of Legal Design to access to justice is only just starting to be realised. Yet, it is important to point out that technological innovation is not the only output of Legal Design, and in fact, a critical feature of Legal Design theory is that it cannot be started without the end user in mind. The process requires a genuine understanding of the end user(s), placing an emphasis on practitioners immersing themselves in that user's world so they can design interventions based on end user perspectives, rather than from a pre-determined solution. Legal Design also requires practitioners to be comfortable with using creative means, as opposed to solely analytical means to solve difficult problems.

VI CONCLUSION

This article has painted a picture of the need for innovation in the civil justice context, pointing to the need for real and effective access to justice to meet the unmet legal need in Australia. It has then tracked some of the major trends in technological innovation, and the core questions that remain for using technology to achieve improved access to civil justice. Since the 1970s, various mechanisms have been deliberately introduced into the civil justice system to facilitate access to justice, with varying degrees of success. The advent of low-cost legal technology will forever change the access to

¹⁴⁰ Jonathan Ames, 'Technology is driving force of legal shake-up', *Raconteur* (Web Page, 19 February 2015) <<https://www.raconteur.net/risk-management/technology-is-driving-force-of-legal-shake-up>> quoted in Magda Ibrahim, 'How technology is granting public access to justice' (Web Page, 30 November 2018) <<https://www.raconteur.net/risk-management/technology-public-access-justice>>.

¹⁴¹ 'Home', *Comic Book Contracts* (Web Page) <<https://www.comicbookcontracts.com/>>.

¹⁴² Matthew Holloway, 'How Tangible is Your Strategy? How Design Thinking Can Turn Your Strategy Into Reality' (2009) 30(2-3) *Journal of Business Strategy* 50, 51.

justice landscape. One major consequence is that reform is now no longer the sole domain of governments using legislation and policy-driven reform. Instead, private providers and those with a passion for change can themselves innovate, and they face relatively low entry barriers. For the first time in history, non-government actors can engage with civil justice issues and make a real difference to those whose lives or livelihoods are impacted by civil disputes. Those currently riding the fourth wave promote legal technology as a panacea at best and, at the very least, an objective-tool capable of offering simplified, cost effective access to civil justice.

However, the decision to create and deploy legal technology to enhance access to justice always carries numerous design considerations, many of which are value-laden in relation to accessibility, digital exclusion, efficiency, cost, fairness and equity. It remains to be seen whether the current plethora of hackathons and seed grants designed to inspire next generation legal entrepreneurs will revolutionise the system, or instead create a bewildering array of disconnected and competing apps without overall addressing the current complexity of the law and its processes.

Three key points are worth reiterating for future policy and research. First, there is a mistaken assumption that digital exclusion and literacy divides are largely resolved, leading many to assume that technology can plug gaping pro bono gaps left from diminishing legal aid budgets. These assumptions need to be challenged with ongoing clear data – not just on the capacity of citizens to access tools, but their ability to effectively use and understand them.

The second challenge can be easily identified but less easily resolved – namely that enthusiasm for innovation can overshadow the complexities required to properly administer justice. Caution should not obstruct attempts to engage in these fourth wave reforms, but caution is certainly required. As the Australian Human Rights Commissioner Edward Santow has observed: at the same time the technology offers the promise of ‘foster[ing] inclusion and accessibility’, there are potential human rights implications.¹⁴³ We argue that the way forward is vigilant and active engagement by legal actors from across the sector, supported by and supporting the broader community. It is essential that legal practitioners actively participate in the creation of legal technology, or at the very least, provide ongoing legal analysis and empirical research, making legal technology accountable to upholding sound legal doctrines and principles.

Great care needs to be taken to ensure that algorithms are created in a socially responsible fashion, and do not to serve to entrench already existing prejudices and assumptions in the legal system, or trample on due process considerations. Koulu cautions that a failure to do this will cause algorithms to be yet an additional barrier to access to justice rather than a facilitator of access to justice.¹⁴⁴ Similarly Justice Steven Rares observes:

¹⁴³ Edward Santow, ‘Putting Human Values into the Machine’ (2018) 27(3) *Human Rights Defender* 13, 14.

¹⁴⁴ Riikka Koulu, Lila Kaillo and Jenni Hakkarainen, *Law and Digitalization: An Agenda for the Future* (Report No 1, May 2017) 7.

a system of justice is an institution for the redress of grievances. It can only command the respect of a society's members if they trust that it is an impartial, equal, transparent and principled system that gives effect to the rule of law.¹⁴⁵

The third challenge is one of emphasis. It is important that technological innovation should not displace non-technological innovation, as the refinement and improvement of substantive and procedural laws is an ongoing task. Equally, it is imperative that broad stakeholder perspectives be incorporated into the development process — with none more important than those being impacted by the technology, or end users. In the past, the law has been accused of failing to listen to the voices of the most vulnerable, instead opting to consider policy-maker views over the end user. Failure to address end user and societal needs has come at a price from a literal cost and efficiency standpoint, and more importantly an access to justice stance; resulting in poorly devised systems being unapproachable, inaccessible or inherently biased.

In this paper we suggest that approaches like Legal Design, which places an emphasis upon the end user, should be used as a plank for future legal technology. To date, Legal Design approaches are relatively nascent concepts for legal practice, education and research. Little exploratory research and even lesser empirical data exists to give guidance to legal practitioners, technological developers, academia and policy makers on Legal Design approaches, usage, applicability or effectiveness. They nonetheless offer a useful set of precepts for thinking about legal innovation, and an important framework for keeping user needs and experience front and centre of reform processes. Likewise, more research and guidance is required to aid legal practitioners and educators on the necessary skills and capabilities required to develop a 'Legal Design' mindset that places emphasis on experimentation. There is also the question of what other innovative approaches are being utilised in legal practices to achieve better access to civil justice systems and how these innovations are impacting on legal practice business models and the institutions what administer civil justice (such as courts and tribunals). These are just a few possible areas ripe for future exploration and testing to ensure that legal technology enhances and optimises access to civil justice.

¹⁴⁵ Justice Steven Rares, 'Is Access to Justice a Right or a Service?' (Speech, Access to Justice: Taking the Next Steps Symposium, 26 June 2015).

