Taking advantage of advances in technology to enhance the rule of law

This paper explains the effect that advances in technology are having upon the discipline of law in academia, the practising profession and the courts. It gives examples of the changes that are occurring and argues that advances in technology should be used to enhance the rule of law. It makes several proposals: that universities adopt a hybrid of online and in person learning; that the raw materials of the law be made available online for free; that publishers transform journal articles into interconnected online resources; that firms take advantage new technologies and compete vigorously to drive down the cost of legal services; that lawyers be open minded and motivated about using new technologies; and that courts adopt electronic litigation platforms but resist receding into cyberspace.

Introduction

In 2016 it is possible to obtain a bachelor of laws online without ever setting foot inside a university; legislation, regulations, cases, journal articles and books are available in digital format; it is possible to file documents, appear or give evidence in court without ever attending a courthouse; and Justices of the High Court use AustLII to look up citations before getting up from their computers to collect hard copy law

reports from their bookshelves.[1] This paper is about how advances in technology are changing the discipline of law in academia, the practising profession and the courts. It is also about how to best take advantage of these advances.

Whilst some say that advances in technology will bring about the end of lawyers, taking this sort of hyperbole seriously is largely confined to the press. Even Richard Susskind, who named his book 'The End of Lawyers?',[2] did not really mean it. The book as a whole speaks of transformation and change of the role of the lawyer, not of the end of lawyers. This is the better perspective. Advances in technology are changing the discipline of law, and the goal of the academy, the practising profession, and the courts, should be to take advantage of those advances in the right way.

But what is the right way? It is hard to speak of it without betraying an underlying bent for self-preservation or preservation of familiar institutions. Looking at the effect of advances in technology upon the discipline of law without doing so is difficult. For the experienced lawyer it means abandoning assumptions that have been held and reinforced over a long period of time. For the student or inexperienced lawyer it means facing up to the reality of a more uncertain future. Nevertheless, protecting current institutions and practices is not, on its own, a valid reason to either embrace or avoid change.

This paper argues that there is only one valid reason to either embrace or avoid change: to enhance the rule of law in Australia. It makes reference to principles of the rule of law, such as the law being able to be known by everyone, equality before the

[1] Justice Stephen Gageler (Speech delivered at AustLII's 20th Anniversary, University of Technology Sydney, 20 November 2015)(unpublished).
[2] Richard Susskind, *The End of Lawyers?: Rethinking the nature of legal services* (Oxford University Press, 2010).

law and access to justice.[3] It also recognises the contribution that high quality legal education, research and publication, a competitive but mindful profession, and an efficient court system, make to the rule of law. It is split into three parts. The first part considers the academy, the second part the profession and the third part the courts. Each part not only explains how advances in technology are changing the discipline of law but also puts forward particular ideas for how technology can be used to make studying, teaching, researching, publishing, practising and applying the law better over the coming ten years.

Part I The Academy

The discipline of law in academia includes those who study law, those who teach law and those who conduct and publish legal research. Whilst the judiciary is responsible for protecting and upholding the rule of law the academy is faced with perhaps a more challenging set of responsibilities. The academy is expected to produce competent lawyers who are imbued with a sense of service and fidelity to the rule of law whilst both scrutinising the law and contributing to public debate. This first part of the paper discusses the relationship between advances in technology and the academy. It split into three sections. The first section discusses the interaction between advances in technology and the academy in relation to studying and teaching law. It considers how to handle online learning. The second section discusses the impact of the digitisation of legal materials upon legal research. It argues that within the next ten years all judgments of all Australian courts of superior record should be made available online for free. The final section discusses the impact of technology on the

[3] Chief Justice Murray Gleeson, 'Courts and the Rule of Law' (Speech delivered at the Rule of Law Series, Melbourne University, 7 November 2001); Tom Bingham, The Rule of Law (Penguin Books, 2011, Kindle ed) 37, 55, 90.

production and publication of legal research. It starts by discussing the utility of referencing software but goes on to explain how and why law journals could and should be turned into interconnected online publications.

A. Teaching and studying

Advances in technology have made sweeping changes to how law is studied and taught. These changes are not specific to the discipline of law and include things such as online administration of university courses, online learning and online assessment. As mentioned in the introduction, it is now possible to obtain an Australian law degree online.[4] This is unsettling to many who consider the notion of obtaining a law degree on the internet as something that cheapens its value. However the impact of technology upon the study and teaching of law must be distinguished from the impact of the drastic increase in the number of law schools and student places. The reality that new online law courses are likely to attract lower ranking applicants has no bearing upon the merits of online learning.[5] Online learning should not be evaluated in the context of there being low entry requirements to online law degrees in Australia. It should be evaluated in the context of considering how technology can assist the academy in fulfilling its responsibilities.

When it is evaluated in this context it is clear that there are benefits to learning online.[6] The most significant is that it enables those who are unable to attend classes in person to study law. People who live in remote and regional areas, have disabilities, or have carer or family responsibilities, now have opportunities to study law that did

[4] Michael Kirby AC CMG, 'Online legal education in Australia: The new CQU law degree' (2011) 34 *Australian Bar Review* 237.
[5] Universities Admissions Centre, *Cut-offs for Main Round offers: 2015-16 admissions* (2016).
[6] Kirby AC CMG, above n 4, 242-244.

not exist in the past. This is helping increase the number of law students and lawyers from diverse backgrounds and is therefore assisting the discipline become more representative of society as a whole.[7] But then there are also detriments to studying online. Students who study online miss out on the spontaneity of participating in a physical classroom. On the occasion where a lecturer is particularly charismatic or engaging they miss out on that experience too. However as technology improves it is likely that students studying online will able to participate in a manner akin to their on campus colleagues, many of whom are now undertaking courses that combine lectures, seminars and tutorials with podcasts, forums, discussion boards, blogs and other online components. Such diversification of learning methods can make studying more engaging. However universities should be aware that in a law degree, which already costs so little to provide, moving too much of the course online may be viewed skeptically as a cost cutting mechanism. A healthy hybrid of traditional and online learning methods is the best way forward.

The best way to achieve this hybrid is to incorporate online learning into the curriculum in a way that mimics what graduates will end up doing in practice. Some universities are designing courses with this in mind already. The University of Technology in Sydney, for example, will soon begin incorporating the dispute resolution software used by the New South Wales Civil and Administrative Tribunal into its Civil Practice course.[8] It has also partnered with Allens and Neota Logic to create a 'Tech Challenge for Social Justice' where students compete to create intelligent web applications that promote access to justice and make tailored legal

[7] Ibid 243.
[8] Philippa Ryan, *UTSpeaks: Unprecedented Disruption*, 9 August 2016.

information more reachable.[9] Other universities and colleges should take note of this integration. Every opportunity should be taken to integrate learning legal theory with developing practical (especially technological) skills.

Aside from online learning, advances in technology have also changed the way students are assessed. Assignments are now often submitted and graded online. The introduction of software to detect plagiarism has meant that markers can be assured that their students have not collaborated with each other or copied from another source. However, at the same time, students are still handwriting exams. Given the poor quality of the handwriting of someone who is both stressed and pressed for time it is hard to believe that this practice continues. Over the coming ten years written exams must be abandoned in lieu of typed exams. Allowing students to type exams would better reflect the working environments they will enter, allow them to review their answers without having to cross things out and write in margins, and reduce the chance of someone receiving a lower mark than they deserve because of poor handwriting.

B. Legal research

The most profound change to the discipline of law in academia has been the digitisation of legal resources. The law student of today will probably never read an actual volume of the Commonwealth Law Reports or a hard copy of an Act of Parliament. The fact that legislation, cases, journal articles and (in some cases) books are available online has revolutionised legal research. A student looking for resources relevant to a particular issue in the past would probably have started with a textbook and scoured the indexes of statute books, law reports and journals. Today a student

[9] University of Technology Sydney, *Allens, UTS Law and Neota Logic create "Tech Challenge for Social Justice"*, 9 August 2016.

may still start with a textbook but will never find themselves scouring indexes. They will use an online database and arrive at a more complete and sophisticated list of results than any manual search could ever achieve. Whatever skill or knowledge was involved in understanding how to use indexes has been supplanted with the skill and knowledge necessary to best utilise online databases and search engines.

Search engines can be used not just to find relevant cases but also to find specific keywords within cases. It is possible to download a judgment, search within the judgment for certain words and jump to the relevant paragraphs before moving on without ever engaging with the judge's reasoning. This may mean that the law student of today is less likely to read a judgment in its entirety than the law student of yesterday. However one suspects that the law student of yesterday was just as hasty albeit less empowered in their haste. Academics should keep the utility of in-text searching in mind when assigning readings to students. Students should strive to master these searching techniques but also take time to engage with judgments in depth. As finding legal information becomes easier and easier (as the later discussion on artificial intelligence indicates it will) critical thinking and legal reasoning skills will eclipse the skill of legal research more than ever before.

Online databases such as AustLII, LexisNexis and Westlaw have allowed for legislation to be presented in an interconnected format. They provide legislation from all Australian jurisdictions complete with hyperlinks such that, if one section refers to another section, or a word is used that is defined in the dictionary, a user can click the hyperlink and go straight to that other section or definition.[10] They have functions that allow a user to see every other item on the database that refers to the particular

[10] Graham Greenleaf, Andrew Mowbray and Philip Chung, 'AustLII: Thinking Locally, Acting Globally' [2011] *University of New South Wales Faculty of Law Research Series* 31.

section, regulation, case or journal article that user is reading. Commercial publishers like LexisNexis and Westlaw go even further and include commentary alongside the legislation and, when it comes to cases, include details of how they refer to each other. Users can see both how a particular judgment has been referred to by later judgments as well as how that judgment refers to judgments of the past itself.

These technological advances are already improving the rule of law in Australia. They are providing lawyers with a means of making sense of the ever growing and often convoluted mass of legislation that has been (and is still being) produced by Australian Parliaments. There has been criticism for some time that Australian Parliaments enact too many laws that are too detailed and in the process force courts to focus on technicalities rather than substance. Sir Anthony Mason argued in 1992 that, as the law increases in complexity, citizens become less aware of their rights and responsibilities and more dependent upon legal and professional advice.[11] More recently Justice Rares of the Federal Court explained how prescriptive drafting and constant amendment of legislation impedes the efficiency of both lawyers and judges.[12]

In the more distant future artificial intelligence will prove to be the cure for this affliction – a malady that should be known as *legislitis*. How it will do so is discussed in the next part of this paper. For the time being the intuitive and integrated ways in which lawyers can now access legislation online are making it easier for those affected to cope. Over the coming ten years steps must be taken to ensure that online databases grow to become comprehensive collections of Australian law. It may come

[11] Sir Anthony Mason, 'Corporate Law: The Challenge of Complexity' (1992) 2 *Australian Journal of Corporate Law* 1, 2.
[12] Justice Stephen Rares, 'Legality, rights and statutory interpretation' (Paper presented at the Australian Government Solicitor Administrative Law Conference, Canberra, 20-21 June 2013) [51], [75].

as a surprise that many judgments are still unavailable online. There are no judgments of the Supreme Court of New South Wales available online for the years 1951 to 1970. There are no judgments of the Supreme Court of South Australia available online for the years 1950 to 1971. There are no judgments of the Supreme Court of Western Australia available online for the years 1959 to 1984. There are no judgments of the Supreme Court of Queensland available online for the any of the years up to 1971.[13] Having only certain judgments available online makes research more complicated than it should be. It also creates a risk that students, academics, practitioners and judges alike may overlook important cases.

Within the next ten years all judgments of at least the courts of superior record must be made available online. Not only must they be made available online, they must be made available online *for free*. That the law is capable of being known to everyone is a fundamental principle of the rule of law. The inescapable truth is that the law is capable of being known only to those with the ability to understand it themselves or the resources to procure legal advice. The problem today is that people are still being denied the opportunity to understand the law themselves because the raw materials of the law are not freely accessible. The raw materials of the law – acts, regulations and judgments – must be available for free before it can be said that the law is capable of being known to everyone. It is not right that the judgment of a court – a public institution – written by a judge – a public servant – can be privately owned. Within the next ten years Australian governments should acquire the rights to the judgments of all Australian courts and release them into the public domain.

[13] Taking into account the resources available on AustLII, LexisNexis and Westlaw.

C. Production and publication

Advances in technology have not only changed how to find sources of information but also how to refer to them. Referencing programs like EndNote enable users to insert properly formatted references with nothing more than a few clicks. All a user has to do is download the relevant output style – for Australians this means a style that replicates the requirements of the *Australian Guide to Legal Citation* – and start adding their sources. There are two ways to add sources. The first is to type out the metadata for the source manually. The metadata for the *Engineers Case,* for example, is the full title (*Amalgamated Society of Engineers v Adelaide Steamship Co Ltd*), the year of the decision (1920), the law report series (CLR), the volume of the law report series (28) and the starting page in the volume (129). The second way to add sources only works if the source is in an electronic format (such as a PDF) and is embedded with a *digital object identifier* (DOI). In this situation the file itself can be imported and its metadata will populate automatically.

Once the metadata has been added the user never has to type out the source's details ever again. Users can write and reference and a bibliography will generate by itself along the way. Where sources are referred to multiple times a short title, 'above n' or 'ibid' will appear automatically whenever appropriate. Learning to use referencing software allows someone to draft faster, to better keep track of sources and to avoid scrambling to insert references right before a paper is due. Yet for all these advantages many academics and students still do not use referencing software. This is because the software is not yet user friendly enough. Most people do not feel like losing the time it takes to learn to use the software when they want to get on with writing a paper. Many are also comfortable typing out the reference once and then just

copying and pasting that reference whenever they need it again. This suggests that referencing software is not yet all that it could be.

Over the coming ten years this software needs to develop to the point where any PDF can be dragged and dropped into a referencing program and then referenced without any need to type out the metadata. Imagine how easy it would be to research for a few hours, save any relevant articles, then drag and drop them into a program and have all the details about those articles populate by themselves. For this to happen the articles need to be embedded with the metadata or with some way of gathering it. As mentioned earlier, this already happens if a PDF has a DOI (digital object identifier). Many publishers around the world use DOIs but the largest publishers of Australian legal materials, LexisNexis and Westlaw, do not. The remainder of this part of the paper will explain what DOIs are and show how adopting them could revolutionise the publication of legal research.

The standard way to find something on the internet is to use a Uniform Resource Locator (URL). Consider the article 'Dynamic Competition in Antitrust Law' by J Gregory Sidak and David J Teece published in the fifth volume of the *Journal of Competition Law & Economics*. Oxford University Press holds the rights to this article and it can be accessed at the following URL:

http://jcle.oxfordjournals.org/content/5/4/581

Anyone who wants to include a link to this article will probably link to the above URL. But what happens if Oxford University Press sells the rights to the *Journal of Competition Law & Economics* and the article is moved to a different website? Or

what happens if Oxford University Press restructures its website and changes where the article is located? In either situation the above URL will lead to a **404 Not Found Error**. This is a serious problem that threatens the long-term accessibility of academic materials on the internet. Fortunately Oxford University Press has overcome this problem by assigning the article with the following DOI:

10.1093/joclec/nhp024

DOIs are unique alphanumeric strings managed by the International Digital Object Identifier Foundation.[14] Each individual DOI corresponds to a URL that is kept up to date by the content holder. If Oxford University Press restructures its website it can update the URL for each DOI on the Foundation's database. Or if it sells the rights to the *Journal of Competition Law & Economics*, the new owner can update the DOIs for each article so that they lead to the new location of the article. As long as the DOI is kept up to date with a current URL a *persistent link* can be generated that always leads to the article. The persistent link for the above article is:

http://dx.doi.org/10.1093/joclec/nhp024

The idea is that this link *always* leads to the article no matter where it is located or who owns it. Publishers hosting judgments of Australian courts and Australian journal articles should start embedding their files with DOIs to ensure that judgments and articles can always be found and can be imported into programs like EndNote with

[14] International Digital Object Identifier Foundation, *DOI Handbook* (22 February 2016).

the metadata already onboard. Observant readers may have noticed that there are no ugly URLs cluttering up the footnotes of this paper. This is because all the references are hyperlinks. Most of them will be dead and useless within a decade. Once a uniform way of creating persistent links has been adopted there is no reason not to turn all references in all journal articles into hyperlinks. The advantages of doing so would be phenomenal.

Imagine reading a journal article and being able to navigate to the sources it refers to with nothing more than a click. This would speed up research, increase academic accountability and provide a method of tracking how many times an article is referred to. The gain in speed would come from being able to engage with someone else's research almost instantaneously. The increase in academic accountability would come from being able to examine how an academic (or a student for that matter) has used their sources. The method of tracking how many times an article is referred to would be to crawl all the databases and track how many articles embed that particular article's DOI in their source code. This would provide an accurate picture of how original or influential any piece of scholarship is. Given that the technology already exists to do this there is no reason – aside from the immense effort involved and need for competing publishers to cooperate with each other – that it cannot be achieved within the next ten years.

Part II The Profession

The debate surrounding impact of advances in technology upon the discipline of law is most fervid when it comes to the impact upon practising profession. This is because the profession's future is less secure than that of the academy and the courts. It is

subject to market forces that those institutions are not. This second part of the paper is split into two sections. The first section discusses some of the ways in which advances in technology have changed the legal profession with an emphasis on the most recent developments. The second section argues that these changes will improve the profession and enhance the rule of law. It also argues that lawyers should be both open minded and motivated about learning how to use new technologies.

A. The advances

Many of the advances in technology that have changed the practising profession, like those that have changed the academy, are not specific to the discipline of law. Email has changed the way that lawyers communicate with each other, with their clients and with the courts. Along with video communications technology it has facilitated the growth of truly national and global law firms. The ability to store files and communicate digitally has led many firms to embrace becoming 'paperless'. The days of litigation deforestation are almost over. However, in the interim, firms are busy scanning documents that were provided in hard copy and printing documents that were provided digitally.

A perverse consequence of businesses becoming paperless is how much more content they are able to produce. When it comes to litigation this often means that reams of digital communications are printed when producing documents, briefing counsel and preparing evidence. So much content is being produced that human beings are becoming incapable of conducting document reviews without the assistance of technology. Lawyers now use software to review documents. Some firms have even started using artificially intelligent 'predictive coding'. This is where a lawyer reviews a sample of documents on a database and the database picks up the pattern in

their decision-making then uses it to review the rest of the documents on its own. A review undertaken using predictive coding has been found to be at least as accurate, and more consistent, than a manual review.[15]

In addition to using technology to review documents, lawyers are also using technology to create them. Sophisticated workflow programs can create pre-filled templates of correspondence, contracts and other documents. Contracts themselves are changing. The first wholly paperless real property transaction occurred earlier this year.[16] There are now self-executing 'smart contracts'. These are computer programs that can 'facilitate, verify or enforce the performance of a conventional contract'.[17] Consider a lease that requires rent to be paid fortnightly. Normally the lessee has to make a bond payment and then pay rent once a fortnight. If the lease were a smart contract then the contract itself would have the ability to access the lessee's bank account and make those payments on its own. It would also have the ability to return the bond upon termination of the contract (after getting the lessor's approval). It is expected that smart contracts will take advantage of blockchain technology.

Everyone is talking about 'blockchain' but no one seems to be capable of explaining what it is. This is because the way blockchain technology is combined with cryptography to maintain the integrity of cryptocurrencies like Bitcoin is very confusing. However the concept of a blockchain itself is quite simple. A blockchain is just a decentralised register. This means that, instead of one body being responsible for maintaining the integrity of its contents, random third parties verify each transaction. The reason it is called a *blockchain* is that each transaction forms a *block*

[15] *Pyrrho Investments Limited & Anr v MWB Property Ltd and Others* [2016] EWHC 256 (Ch).
[16] 'Paperless apartment sale in Sydney suburb makes history', *Australian Financial Review*, 9 June 2016.
[17] Lewis Rinaudo Cohen, and Pamela Buxton, 'Blockchain's three capital markets innovations explained', *International Financial Law Review*, 17 June 2016.

that, once verified, is added to the end of a sequential *chain* of every other transaction. There could be, for example, a blockchain of all real property transactions. Consider again a smart lease contract. Once both parties approve the contract it would be submitted to six or so random third parties for verification. These third parties check other transactions on the blockchain to ensure: (a) that the lessor is entitled to lease the property; and (b) that the property has not already been leased to someone else.

If these third parties verify the transaction then the agreement crystallises and the lease is added as one block to the end of a long chain of all other real property transactions. Blockchains are confusing in practice because all of the information that passes between the parties is heavily encrypted and decrypted to ensure the integrity of each transaction. Readers can click here to watch a video that explains the process for it is beyond the scope of this paper. There is an expectation that blockchain technology will have a significant impact upon all kinds of transactions in the future. It may affect law directly, as the above example would by altering the Torrens Title system, or indirectly, by changing how other institutions, such as banks or financial markets, operate.

Earlier this year mainstream media was awash with reports that American firm BakerHostetler has employed the world's first 'artificially intelligent attorney' – a robot named ROSS – to work in its bankruptcy practice.[18] ROSS runs on an application-programming interface from IBM's Watson project. It answers natural language questions and becomes smarter with use. Users can ask something like 'can a court reopen a case once the proceedings have been dismissed?' and ROSS will respond by providing passages from relevant cases. Users are able to click to see each

[18] See, eg, Kate Turner, 'Meet 'Ross,' the newly hired legal robot', *The Washington Post*, 16 May 2016.

passage in context and are expected to answer the question 'Was this relevant?' by giving the passage a thumbs up or a thumbs down. This is ROSS' most important feature. It learns from the feedback that its users provide to develop increasingly relevant answers. [19]

From one perspective ROSS is nothing more than a glorified search engine. Andrew Arrudda, one the founders of ROSS Intelligence, claims that the fact that ROSS responds to and learns from questions means that it understands those questions in a way that a search engine responding to keywords does not.[20] Yet as the Chief Justice of New South Wales recently explained, learning from a feedback mechanism is not the same thing as understanding a question.[21] Arrudda himself has conceded this point. Speaking at the Artificial Intelligence and the Law Conference at Vanderbilt Law School, he explained that ROSS aggregates and presents large quantities of data but cannot synthesise, analyse, draw comparisons or act as an advocate as these abilities are 'uniquely human attributes'.[22] But ROSS is nevertheless a remarkable development that is likely to see keyword searching with Boolean connectors become obsolete within the next decade. The data it will generate may even allow analysts to identify deficiencies in the way in which lawyers approach legal problems.

According to Arrudda the goal of ROSS Intelligence is to give every *lawyer* access to ROSS. He claims that the public cannot be given access because they lack legal

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[19] Andrew Arrudda, 'ROSS' (Speech delivered at Artificial Intelligence and the Law Conference, Vanderbilt Law School, 13-14 April 2016).
[20] Ibid.
[21] Chief Justice T F Bathurst AC, 'Advocate v Rumpole: Who will survive? An analysis of advocates' ongoing relevance in the age of technology' (2015) 40 *Australian Bar Review* 185, 190 citing J R Searle, 'Can Computers Think' in D J Chalmers (ed), *Philosophy of mind classical and contemporary readings* (Oxford University Press, 2002) 669, 671.
[22] Arrudda, above n 19.

training and could corrupt the program by asking the wrong questions.[23] This claim may be intended to placate fears of lawyers that investing in ROSS is investing in their own extinction. There seems to be no reason that the public could not be given access to ROSS in a way that does not allow them to provide feedback. This technology could develop to the point where a person asks a legal question and something like ROSS answers back. For this to happen ROSS would need to become a chatbot in addition to being a search engine. Chatbots are artificially intelligent conversationalists that are expected to make mobile apps redundant in the not too distant future. Instead of downloading the Domino's Pizza app, for example, someone will talk to a Domino's Pizza chat bot, which will have the natural language capabilities to place their order and answer questions. As voice recognition technology improves chatbots, although they are expected to first emerge in instant messaging applications, will eventually speak to humans as humans speak to each other.[24]

B. The right attitude

When all of these developments are taken into account it is easy to see why there are bleak predictions for the future of lawyers. Technology is replacing many of the tasks that were traditionally done by lawyers, particularly junior lawyers. And as scary as this may be, the more frightening reality is that technology is not just eating up work that was traditionally done by lawyers, it is also eating up work that was traditionally done by the businesses and other professionals that lawyers do work for. There may not only be less work for lawyers to do but less clients for them to work for.

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[23] Ibid.

[24] See generally Matt Schlicht, 'The Complete Beginner's Guide to Chatbots'*, Chatbots Magazine*, 20 April 2016.

It is at about this point that most apocalyptic predictions of the future of the legal profession end. They list all the things that lawyers do now that they will not be needed for in the future and conclude that lawyers will soon be extinct. Such thinking ignores the things that lawyers do that technology cannot replace. Technology will not be able to replace an individual listening, reading, thinking, writing or appearing on someone else's behalf. Lawyers will always be able to charge for doing these things. Or, in the alternative, if technology does advance to the point where machines can do them instead, not only will lawyers be extinct, every profession will be extinct. In fact lawyers will probably be the last to go. Who else will clean up the mess left by everybody else?

These predictions also ignore how advances in technology are creating new work for lawyers. They are doing so in two ways. The first is by facilitating the emergence of new *kinds* of work. Technology is creating new legal problems whilst enabling lawyers to provide services that they were previously unable to provide. An easy example of a new legal problem is the surge in defamation claims made on the basis of defamatory social media posts. An example of a new service is computer driven regulatory analysis. A technologically empowered law firm can offer businesses all sorts of regulatory reviews that those businesses would never have considered before because of how expensive it would be for lawyers to do them manually.

The second way that advances in technology are creating work for lawyers is by enabling ordinary citizens to start consuming legal services. In 2014 the Productivity Commission estimated that only 8% of Australian households are eligible for legal aid. The means that, whilst high income Australians may be able to meet the costs of litigation or obtaining legal advice, there is a 'missing middle' of Australian citizens

who are unable to afford legal services.[25] As the cost of running a practice decreases, and it starts to take far less time to complete legal work, this 'missing middle' will be able to start consuming legal services. This is the main reason that advances in technology are going to enhance the rule of law. It eclipses anything that the academy or the courts could ever do. Market forces and entrepreneurial lawyers who are passionate about social justice are driving down the price of legal services and opening up the huge untapped market made up of the 'missing middle'. They have already started doing so.

The question for the rest of the profession is whether or not to get on board. All lawyers – sole practitioners, those who work in firms small, medium and large, in house counsel and barristers – can make a contribution just by having a positive attitude towards embracing advances in technology. The best thing that firms can do is to compete vigorously with each other. Even firms that service large corporate clients can make a difference. The more efficient the system becomes overall the better it will be for everyone involved. Firms must always be on the lookout for ways that technology can improve the services they offer their clients. This means seeking out the right talent and seeking out and investing in the best technology.

At the same time firms must be aware of the novel problems that may arise when relying upon technology. If lawyers are going to rely upon software they need to have appropriate measures in place to ensure that the software is in fact reliable. Lawyers must be involved in the design and maintenance of software applied in legal

[25] Productivity Commission, 'Overview', Acess to Justice Arrangements, Inquiry Report No 72 (2014) 20.

processes.[26] The best practice is to combine modern technology with 'really good humans'.[27] 'Really good humans' include those who are tech-savvy as well as those who are less tech-savvy but are open-minded and motivated about learning to use new technologies. Older lawyers who did not have the luxury of learning how to use modern devices accidentally whilst growing up should keep this in mind. No one should want to be the last barrister asking for a twenty-volume brief when everyone else has moved on to using iPads.

Part III The Courts

Australian courts are ahead of the curve when it comes to taking advantage of advances in technology. The Federal Court was one of the first courts (perhaps even *the* first court) in the world to adopt an electronic filing system.[28] To varying degrees all Australian courts now provide information, documents and resources online, allow for documents to be filed and fees to be paid electronically, and make use of audio and video services.[29] This final part of the paper considers the three most significant changes to the courts brought about by advances in technology: the ability to interact with a court online, to make use of electronic hearing technologies in litigation and to appear in court by remote means. It is split into two parts. The first part argues that electronic filing and electronic hearing technologies should be integrated to create

[26] Justice Melissa Perry, 'iDecide: the Legal Implications of Automated Decision-making' (Paper presented at the Cambridge Centre for Public Law Conference 2014: Process and Substance in Public Law, 15-17 September 2014).
[27] Beth Patterson, *UTSpeaks: Unprecedented Disruption*, 9 August 2016.
[28] Michael Black, 'The Federal Court of Australia: The First 30 Years – A Survey of the Occasion of Two Anniversaries' (2007) 31 *Melbourne University Law Review* 1017, 1049 cited in Philippa Ryan and Maxine Evers, 'Exploring eCourt innovations in New South Wales civil courts' (2016) 5 *Journal of Civil Litigation and Practice* 65, 66.
[29] Productivity Commission, *Acess to Justice Arrangements*, Inquiry Report No 72 (2014) 575. For a full description of the electronic services available in different Australian jurisdictions as of 2014 see page 579 of the Commission's report.

litigation platforms. The second part argues that, whilst there are certain circumstances where an advocate or a witness should be allowed to appear by remote means, any movement towards court itself becoming an online service should be resisted.

A. Litigation Platforms

In the infancy of the Federal Court's electronic filing system documents were filed online and then printed, stamped and filed in the traditional way.[30] Today electronic filing in the Federal Court (and many other Australian courts) is a wholly digital process where the forms are filed online and never printed in hard copy. Where electronic filing has been implemented it has saved time and cut costs for courts and litigants alike.[31] There is no real need to say that all filing should become wholly electronic over the coming ten years. It is obvious that courts are moving in this direction already. It is similarly obvious that courts are moving towards being able to provide more 'electronic hearings'. These are hearings where all the evidence is accessed electronically in a room that looks more like the cockpit of a sci-fi spaceship than it does a court. Electronic hearings are typically reserved for matters that are document heavy. In the Federal Court, for example, a hearing may be conducted using documents in an electronic format when 200 or more relevant documents are stored in an electronic format.[32]

Over the coming ten years steps should be taken to turn *all* hearings into electronic hearings. The biggest obstacle to doing so is presumably the cost, the most significant

[30] Philip Kellow, 'The Federal Court of Australia: Electronic Filing and the eCourt Online Forum' (2002) 4 *University of Technology Sydney Law Review* 123.
[31] Federal Court of Australia, 'Appendix 10: Federal Court of Australia – Electronic Court File', *Annual Report* (2014-2015).
[32] Federal Court of Australia, *Practice Note CM 6 – Electronic technology in litigation,* 1 August 2011, [1.2](a).

being the cost of hardware. Whilst software can be updated over time hardware tends to become obsolete within only a few years. For this reason courts should consider moving away from paying for hardware and towards developing software that the parties are required to use on their own devices. This electronic hearing software should be integrated with the court's electronic filing software to create *litigation platforms.* The remainder of this section will explain what such a platform should look like.

The litigation platform would be a software application upon which all litigation events take place. A matter would commence when one party files an originating process on the platform and serves it on the other party. This will be the first and last time that one party ever has to serve something on the other as from that point on filing something on the platform will constitute service. The other party will then have the opportunity to file a Defence and/or a Statement of Cross Claim. At this point the platform should liberate the litigants from having to fill out and decipher forms. All forms relevant to the dispute between the parties should be accessible on the platform pre-filled with all the details of the parties, solicitors, matter and court and the date and time. Where one party files one form the other party should be given a list of options for how to respond. This will be of greatest utility when it comes to interlocutory applications. If one party proposes orders and the other consents to those orders then the application can be approved on the platform. If one party proposes orders and the other opposes those orders, or the judge or registrar opposes orders that both parties have consented to, then the platform should require both parties to file submissions supporting their position unless the judge or registrar deems it necessary to schedule a hearing for the application.

Evidence should be filed and served on the platform. When one party uploads a document as evidence the other party should have the opportunity to either accept or oppose the inclusion of that document. If a party wishes to oppose the inclusion of a document they should have to indicate the reason why they are opposing its inclusion. By the time of the hearing all the relevant material will be on the platform and counsel should arrive with nothing more than a tablet. The *voir dire* should be conducted by examining the documents that have been marked as 'opposed' on the platform. The judge should then have the ability to accept or reject the admission of each document. By the end of this process each party will be ready to take the court through the documents that they wish to rely upon and the rejected documents will be quarantined.

Introducing litigation platforms such as the one just described would have many benefits. The first is the elimination of hardware costs. Courts would have to provide hardware for their own staff but not for the parties to the litigation. The second benefit, which follows the first, is that courts can stay better up to date with advances in technology because the ability to upgrade the platform will not depend upon having to upgrade hardware. The third benefit is that it would not only eliminate physical files but also the duplication of digital files. This is an advantage over electronic filing and electronic hearing technologies that currently exist. Briefing a barrister, for example, would involve nothing more than drafting observations and providing them with access to the matter on the platform.

There are also some potential detriments to such a platform. The first is that it will be a disaster unless the technology is both reliable and user-friendly.[33] The failure of the

[33] Chief Justice Marilyn Warren AC, 'Embracing technology: The way forward for the courts' (2015) 24 *Journal of Judicial Administration* 227, 231.

recent census is the best example of why this is true. The need to ensure the service always works well will place a lot of pressure on whoever maintains the platform to get it right. A second potential disadvantage is the impact that moving interlocutory applications online will have on the legal profession. Concerns have been expressed that, if new barristers lose opportunities to appear in interlocutory hearings, particularly before the smaller courts, it will deprive them of the ability to obtain work and develop advocacy skills.[34] If this were to happen it would be unfortunate. However, as legal services become cheaper, the proliferation of smaller matters may provide new barristers with the work they need to get started at the bar. New barristers may have the opportunity to act in substantive hearings of smaller disputes rather than act in directions hearings. This may prove to be of even greater educative value than making preliminary applications ever was. If not, other ways of providing learning opportunities for new barristers (such as courses or training events) may be necessary.

The third potential disadvantage of introducing litigation platforms is the possibility that some people will be unable to afford a device to use the platform on or will lack the technical skill to use it to best advantage. As technology increasingly becomes a feature of litigation there will be a significant relationship between usability and access to justice. Steps will have to be taken to ameliorate this disadvantage. Courts will need to provide devices to self-represented litigants who cannot afford their own and will have to provide these people with training and assistance. If this is done then the experience of a self-represented litigant is unlikely to be any better or worse than it is at present. This means that the most significant potential disadvantage is the

[34] Bathurst, above n 21, 192; Ryan, above n 28, 70, 72-73.

chance that a litigation platform will be introduced that is either unreliable or not user friendly.

To avoid this happening, Australian courts should collaborate with governments and with each other to share the expense of introducing, step by step, a single litigation platform in all Australian jurisdictions. Both the platform and the justice system would benefit from such collaboration. The platform would benefit because it could be made intuitive such that, on the basis of the details entered into the originating process, the matter could be listed in the right court in the appropriate jurisdiction automatically. The justice system would benefit because, although collaboration would not require all jurisdictions to adopt the same rules with regard to civil and criminal procedure and evidence, it may spur further movement towards uniformity over time. Increasing the uniformity of court procedures and rules throughout Australia is yet another way to reduce the cost of court services, increase access to justice and thereby enhance the rule of law.

B. Virtual Courts

The second way that advances in technology have changed hearings is the ability to appear, either as an advocate or to give evidence, by remote means. Advocates are only able to appear by remote means in limited circumstances. Take the Online Court of the Local Court of New South Wales as an example. It is limited to dealing with interlocutory and procedural matters. A practitioner can appear online in a General Division matter listed for Defence Callover but can only do so if the other parties agree. [35] Similar restrictions exist elsewhere and demonstrate that both courts and

[35] Local Court of New South Wales, *Practice Note 1 of 2015 – Local Court Civil General Division – Online Court Protocol*, 25 September 2015, [5.1]-[5.4], [6.1]-[6.2].

legislators are aware of the need to harness the benefits but limit the detriments of allowing advocates to appear by remote means.

When it comes to granting leave to give evidence by remote means the courts have developed two broad approaches as to whether or not leave should be granted. The first approach is that a 'substantial case' must be made out to warrant the court declining to exercise its discretion. The second approach is the opposite: that 'good reason' must be shown to warrant the court exercising its discretion.[36] As there has been no resolution of the differences between these two approaches, the best expression of the current position is perhaps that the decision must be made on a case by case, witness by witness, basis, taking into account all the relevant facts and circumstances.[37]

There is no reason to challenge this position. Judges are undoubtedly the best positioned to decide whether or not allowing a witness to give evidence by remote means is in the best interests of justice. But the consideration that judges have given to answering that question assists in answering a far more significant question: are physical courts even necessary? Richard Susskind argues that the growing popularity of video-calling and video-conferencing suggests that there is enormous scope for the creation of 'virtual courts'. These are courts where the judge sits in her or his chambers and all participants attend by remote means. Susskind poses the question: 'is court a service or a place?'[38] This is a question that will have to be answered within the next ten years. It is also one of many subsets of a far larger question facing mankind itself: when should someone be required to do something in person?

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[36] *Kirby v Centro Properties Limited* [2012] FCA 60 (7 February 2012), [3] (Gordon J).
[37] *Australian Competition and Consumer Commission v Pirovic Enterprises Pty Ltd* [2014] FCA 544 (27 May 2014), [11] (Flick J); *Kirby v Centro Properties Limited* [2012] FCA 60 (7 February 2012), [11] (Gordon J).
[38] Richard Susskind, *Tomorrow's Lawyers* (Oxford University Press, 2013) 99.

Advances in technology are fast approaching the point where it will be possible to do almost everything within a virtual space. Think beyond video-calling and conferencing and think virtual reality – 'people-less courts'.[39] But there are some things that should not be allowed to escape physical existence. Court is one of them. There is a public interest in the participants being forced to interact with each other face to face. As Sir Francis Bacon wrote in 1612:

> The place of justice is an hallowed place; and therefore not only the bench, but the foot-pace and precincts and purprise thereof, ought to be preserved without scandal and corruption.[40]

The answer to Richard Susskind's question is that court is a service but the service that it provides often depends upon it being a place. Judgments written in support of the proposition that good reason must be shown before a court will grant leave for a witness to appear by remote means support this answer.

In *Campaign Master (UK) Ltd v Forty Two International Pty Ltd (No 3)* Buchanan J stated that requiring a witness to give evidence in the atmosphere of a courtroom and in the presence of a judge has three potential benefits. The first is that it enhances the 'prospect that the witness will remain conscious of the nature and solemnity of the occasion and of his or her obligations'. The second is that it affords the cross-examiner some reassurance that the gravity and immediacy of the moment are not lost on the witness. The third is that it provides the court with a better environment in which to assess the nature, quality and reliability of responses by a witness.[41] In *Blackrock Asset Management Australia Services Limited v Waked (No 2)* Perram J referred to these three potential benefits as 'powerful considerations'. His Honour

[39] Thomson Reuters, 'The Future of the Courts: A White Paper' (2015), 5.
[40] Sir Francis Bacon, 'Of Judicature', *Essays, Civil and Moral* (1612).
[41] [2009] FCA 1306 (13 November 2009), [78] (Buchanan J).

also emphasised that a trial is a public event where witnesses are confronted by their cross examiners and are made to give evidence in front of the very people involved in the case.[42]

These statements apply just as much to lawyers as they do to witnesses. Appearing in the atmosphere of a courtroom, in the presence of a judge and the very people involved in a case, enhances the prospect that an advocate will remain conscious of the nature and solemnity of her or his duties to the court. This is why the personal interaction between human beings that takes place during a hearing is indispensible to the rule of law. Over the coming years, as more and more human interactions start taking place online, this personal interaction will become even more significant. The physicality of a hearing, when compared to the impersonal online experience that will increasingly dominate so much of day-to-day life, will enhance the authority of the courts. Unless technology advances to the point that the physicality and interpersonal interactions of a hearing can be *replicated* – not just imitated or simulated – courts should resist receding into cyberspace.

The end … of lawyers?

Advances in technology are changing the discipline of law in academia, the practising profession and the courts. There are students studying law today who without the ability to study online would never have had a chance to become lawyers. But universities should be wary of moving too much course work online. They should aim to achieve a healthy hybrid that integrates practical technological skills with legal theory. The ability to access legislation, regulations, cases, journal articles and books

[42] [2011] FCA 479 (5 May 2011), [46] (Perram J).

online has revolutionised legal research. But until the raw materials of the law are available online for free it cannot be said that everyone is capable of knowing the law. All Australian judgments should be released into the public domain. Referencing software allows researchers to manage and cite sources with almost no effort at all. But this software is not yet all that it could be. Australian legal publishers should dump URLs and adopt DOIs to turn law journals into interconnected online publications where articles can be downloaded and dragged and dropped into referencing programs.

Advances in technology are making sweeping changes to the legal profession but this is not the end of lawyers. Perhaps the time will come when the world no longer needs lawyers. Perhaps people will one day always be honest and reasonable, and take time to think before they make decisions, and agree on everything. It would be peaceful but boring. In the meantime the role of the lawyer is transforming. Technology is eating up work that was traditionally done by lawyers but is creating new kinds of work at the same time. Technology is making legal services affordable. The onus is on the profession to get on board with these changes. For firms this means compete. For individual lawyers it means being open minded and motivated about learning to use new technologies.

Australian courts are ahead of the curve when it comes to taking advantage of advances in technology. Courts should avoid investing in hardware and consider integrating electronic filing and electronic hearing technologies to create litigation platforms. Doing so would lead to radical efficiency gains. However any movement towards turning courts themselves into online services should be resisted. There is a physicality and significance of appearing in a court in the presence of a judge and the very people involved in a case that must be preserved. All of the ideas and proposals

put forward in this paper have the potential to make the law more accessible, more competitive and more efficient. They have the potential to enhance the rule of law in Australia and, if the right people get on board, they can be accomplished within the coming ten years.

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